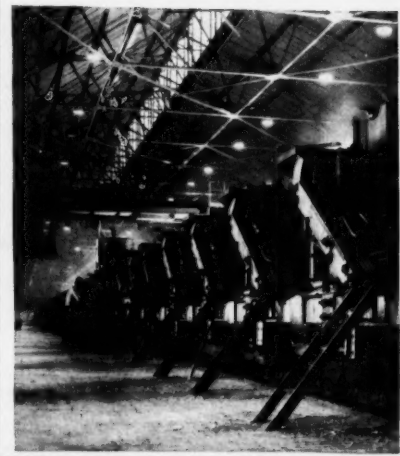


Chemical Week

July 19, 1952

Price 35 cents



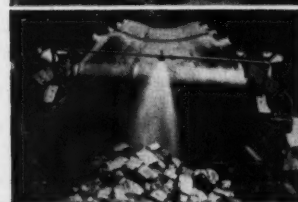
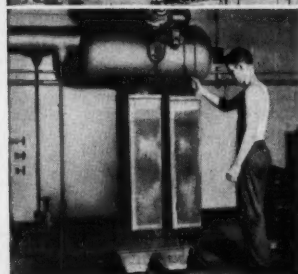
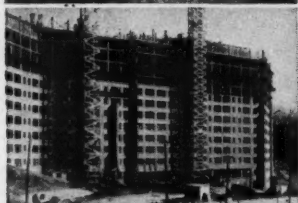
◀ **"Stack-'em-up" White:** Bets tiered cells will make chlorine cheaper p. 29

Make sugar a chemical raw material; that's goal of stepped-up research program p. 35

Boom in the backyard: Easy-to-use liquid fertilizers harvest gardeners' dollars p. 44

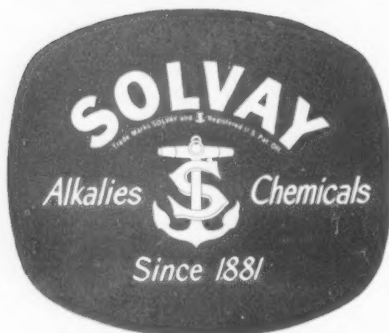
There's a drive to deepen the Delaware; here's what it means to chemical industries . . . p. 52

◀ **Aluminum expansion** hurries cryolite crisis; experts differ on how to meet it p. 61



NEED CALCIUM CHLORIDE?

Check Solvay First



CALCIUM CHLORIDE

- for
- Dustlaying • Drying Air
 - Removing and Skidproofing Ice
 - Concrete Work
 - Refrigeration Brine
 - Freeze-proofing Coal
 - Industrial Waste Treatment
 - Chemical Manufacturing
 - Industrial Processing

And Be Sure of getting the dependable quality and uniformity offered by America's oldest and largest producer of alkalis and associated chemicals.

And Be Sure of delivery service from strategically-located major plants and over 700 local stock points, distributors and dealers.

And Be Sure of a special Calcium Chloride Technical Service and exclusive, authoritative literature that provides expert advice on the many individual uses of Calcium Chloride.

And Be Sure of sales service that is handled by a staff of thoroughly trained, helpful salesmen operating from thirteen convenient branch sales offices . . . plus a nation-wide organization of selected jobbers and representatives.

THE SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

Soda Ash • Caustic Soda • Caustic Potash • Chlorine • Calcium Chloride
Potassium Carbonate • Sodium Bicarbonate • Specialty Cleaners • Sodium Nitrite
Ammonium Bicarbonate • Para-dichlorobenzene • Ortho-dichlorobenzene
Monochlorobenzene • Ammonium Chloride

Chemical Week

Volume 71 Number 3
July 19, 1952

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	11
PRODUCTION	29
RESEARCH	35
SPECIALTIES	44
BOOKS	49
DISTRIBUTION	51
MARKETS	57
BOOKLETS	64

PUBLISHER Wallace F. Traendly
EDITORIAL DIRECTOR S. D. Kirkpatrick
EDITOR W. Allee Jordan
MANAGING EDITOR .. Howard C. E. Johnson
ASSOCIATE EDITOR John J. Craig

ASSISTANT EDITORS: Donald P. Burke, George F. Foy, William Olcott, Anthony J. Piombino, Ralph R. Schulz, Homer Starr, E. L. Van Deusen, J. R. Warren. REGIONAL EDITORS: Frank C. Byrnes, Chicago; John Kent, Washington; James A. Lee, Houston; Elliot Schrier, San Francisco. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Caryl Austrian, Claire Baker. DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill Bureaus in principal cities of the U.S. and throughout the world. CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor. BUSINESS STAFF & REGIONAL OFFICES: See page facing back cover.



Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions \$5.00 a year; \$9.00 for two years; \$10.00 for three years. Canada \$6.00 for a year; \$10.00 for two years; \$12.00 for three years. Other Western Hemisphere Countries \$15.00 a year; \$25.00 for two years; \$30.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$50.00 for three years. Entered as second class matter December 30, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

July 19, 1952 • Chemical Week

Be On The LOOKOUT

Discover— NEW PRODUCTS IN HIGH POLYMER CHEMISTRY

through the
versatility
of



SEBACIC ACID

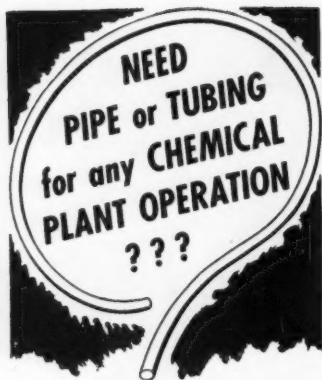
For Other Applications Write:

HARDESTY CHEMICAL COMPANY, INC.

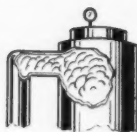
HARCHEM

41 EAST 42nd ST. NEW YORK 17, N. Y.

Canadian Distributor: W. C. Hardesty Co. of Canada Ltd.,
975 Lakeshore Road, New Toronto, Canada



STRENGTH
for Pressure Uses



NON-CORROSIVE
for Acids, etc.

HEAT RESISTANT
for High Temperatures



When you need help with corrosion or application problems, we are always ready to cooperate in the selection of the proper pipe or tubing for your job.

Stainless steel pipe, tubing and fittings are immediately available from warehouse stocks. Our inventories are broad and complete—service is assured.

Murray products include boiler and pressure tubes, seamless mechanical tubing, stainless pipe and tubing, pipe fittings. Tube bending, upsetting and swaging.

WRITE FOR CURRENT STOCK BULLETIN



OPINION

Better Act Soon

TO THE EDITOR: . . . We have read your news article on the carnauba wax situation, "Adios to U.S. Market" (June 21) . . .

On behalf of the Ross Co. and also as president of the American Wax Importers Association, I wish to express my appreciation of your publishing the article. . . .

We hope that before it is too late the Brazilians will realize the error of their actions and will take the necessary steps to correct the situation.

R. E. SIEVERT
President

Frank B. Ross Co., Inc.
Jersey City, N. J.

Bugaboo: Back Siphoning

TO THE EDITOR: . . . Your article "Foam from the Faucet" (May 10) mentioned our adjustable control flow detergent dispenser "Dyjet" and our detergent "Dysh." . . .

You may be interested to know that the difficulty in developing a dispensing unit to be attached to a municipal water line is the elimination of the possibility of any back siphoning. . . .

Our unit . . . has been tested and is acceptable under various city ordinances and requirements for installation on the discharge side of the water supply control valve. . . .

We have, of course, patent pending . . . on the development . . . which features the prevention of back siphoning under the various operating conditions. . . .

R. H. YOUNG
President

The Davies-Young Soap Co.
Dayton, Ohio.

Controlled, Individual Basis

TO THE EDITOR: In W. Metcalf's letter in the June 28 issue, he suggested that rather than the "haphazard administration of fluorides by way of water supplies" for control of dental decay, that fluorides be made available in form of tablets. He may like to know that his suggestion has the proof of time and test.

In 1907 Dr. A. Deninger of Mainz, Germany, reported in the German Dental Journal (*Deutsche Zahnärztliche Wochenschrift*, Vol. 10, 1907) on his eighteen years of successful caries reduction with orally administered calcium fluoride. Dr. Deninger also reported that calcium fluoride pills were available in several Mainz drugstores.

At this time, Dr. D. W. Bronson,

(200 W. 40th St., New York 18, N.Y.) is manufacturing and distributing a fluoride tablet, Calflur. Each tablet contains 2.0 mg calcium fluoride . . . equivalent to the daily optimum fluoride dosage for caries control.

Reader Metcalf is one of the many people who believe that the use of fluorides for reduction of dental decay is desirable on a controlled and individual basis.

ARTHUR H. BRONSON
Van Nuys, Calif.

"Too Hot to Print"

TO THE EDITOR: You have published a number of letters and quite a number of news reports on public relations for the chemical industry . . . Some of the readers who have written to you have criticized you for your views . . . some have suggested that public relations is a "passing fad" . . . and not something of much importance to us . . . Some government officials, as I recall, berated you for your discussions of the Delaney Committee reports . . .

If anyone of these people were to examine feature articles in many national magazines (and in newspapers) . . . they would see just how the chemical industry is maligned and, in some instances, misrepresented.

I'm enclosing, as one example, an article from the *Journal of Living* . . . which really says some nasty . . . and frightening to the public . . . things about chemical insecticides . . .

J. L. GINGRICH
Los Angeles, Cal.

Thanks, Reader Gingrich. Would that more chemical men were as conscious as you of the problems and threats which confront us. Here are a few choice excerpts from the enclosed article: "The New Poison Menace in your Home."—Ed.

"If you value your health, beware of trying to exterminate insects by spraying them with DDT . . . or any of the similar new insecticides.

"Chlordane . . . is dangerous. It is against the law to sell many types of poison without prescription, but you can buy, and use, as much of an insecticide as you wish.

"There was plenty of bad news concerning insecticides at the Select Committee Hearings to Investigate the Use of Chemicals in Foods. But did you hear of it? Probably not, because much of it was a trifle too hot to print.

"If you have any selenium insecticide . . . still have any on hand . . . throw it away. Right now!"

The First Ester in the Celanese* Series of Industrial Solvents

n-Propyl Acetate

LOW COST REPLACEMENT FOR BUTYL ACETATE-ETHYL ACETATE COMBINATIONS, MIBK, IN NITROCELLULOSE FORMULATIONS

Celanese industrial solvents are helping many formulators to cut their production costs. Now Celanese has extended these low-cost advantages into the ester field with the production of n-propyl acetate, the first of this new group to be made available in volume quantities.

n-propyl acetate is proving itself to be a highly efficient and economical replacement for MIBK, butyl acetate-ethyl acetate combinations and secondary butyl acetate, in nitrocellulose lacquers. It is a medium boiling, low viscosity solvent in 90-92% concentration, with a pleasant odor and excellent blush resistance.

Why not call in a Celanese representative to study your special solvent requirements? He may be able to show you how n-propyl acetate or another of the Celanese solvents can give you the performance and production economy you must have. Write for your copy

of technical bulletin N-29 and samples of any of these solvents for evaluation purposes. Celanese Corporation of America, Chemical Division, Dept. 652-G, 180 Madison Avenue, New York 16, N. Y.

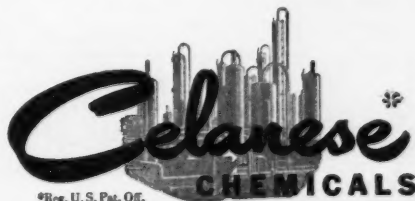
Celanese Specifications n-Propyl Acetate

Color APHA† 15
Spec. Grav. @ 20/20° C. 0.880-0.885
Boil. Range °C. 95-103
Ester Content % 90-92

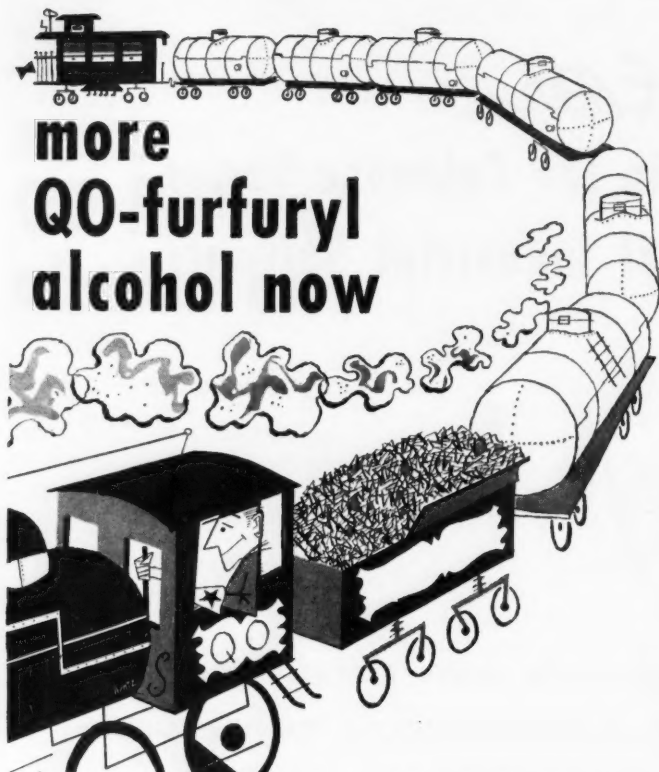
†American Public Health Association

SOLVENTS BY CELANESE

Solvent 203	Acetone
Solvent 301	Methanol
Solvent 601	n-Propyl Acetate
Solvent 901	Butyl Alcohols



*Reg. U.S. Pat. Off.



more QO-furfuryl alcohol now

MORE FA* is available now thanks to an increased supply of furfural from The Quaker Oats Company's new Omaha, Nebraska plant. Now is the time to review your plans for utilizing FA and to contact Quaker Oats regarding your supply of this important chemical.

FA is used as:

1. Chemical building block or intermediate
2. Wetting agent for abrasive grains
3. Impregnating agent
4. Solvent for dyes, cellulosic derivatives, resins and coatings.

FA is used in the manufacture of:

1. Resin adhesives
2. Corrosion resistant resins that are useful in tanks, pipes, equipment, floors, smokestacks, cements, and other items where inertness and room temperature setting properties are important
3. Resin binder for fibers.

Literature is available concerning properties and applications of FA. Your inquiry is invited. Now is the time to act.

PROPERTIES OF FURFURYL ALCOHOL (FA*)

Specific gravity, 20/20°C.....	1.134
Flash point (open cup), °C.....	75
Refractive index, n 20/D.....	1.484
Ignition temperature, °C.....	391
Vapor pressure at 55.5°C., mmHg.....	5.5

*Reg. U. S. Pat. Off.



The Quaker Oats Company

CHEMICALS DEPT.

334F The Merchandise Mart, Chicago 34, Ill.
Room 534F, 120 Wall St., New York 5, N. Y.
Room 434F, P.O. Box 4376, Portland 8, Oregon

In San Francisco: The Griffin Chemical Company • In Europe: Quaker Oats-Graanproducten N. V., Rotterdam, The Netherlands; Quaker Oats (France) S.A. 42, Rue Pasquier, Paris 8*, France
In Australia: Swift & Company, Pty., Ltd., Sydney • In Japan: F. Konematsu & Company Ltd., Tokyo

OPINION

As Long or Longer

TO THE EDITOR: Due to a misunderstanding, you mentioned in your news article on poison ivy remedies ("Starting from Scratch," June 14) . . . "The [zirconium] compound, which appears to work by neutralizing the irritant of poison ivy, urushiol, also has use as a deodorant, though its drawback here is its apparent lack of permanence when applied."

The statement concerning the lack of permanence is incorrect. No deodorant compound now on the market will permanently stop development of body odors. . . . All of them must be used frequently if they are to produce satisfactory results.

A deodorant made from one of the mentioned zirconium compounds will produce deodorant effects which will last as long or longer than any competitive product now on the market. In addition, the approximate pH of deodorant creams and lotions using zirconium compounds is 6. This is a distinct advantage over most commercial deodorants because the pH of the average is 4.5.

I would also like to mention that shelf life tests carried on for several years in our laboratories indicate that the zirconium compounds . . . are stable over a long period of time when mixed with cold creams or suitable carriers.

During our interview covering the indicated poison ivy ointment and deodorant preparation, various other uses for zirconium compounds were mentioned. . . . I mentioned that carbonated hydrous zirconia, an ingredient in these ointments, could not be used in temperature reactions because the compound is not stable at elevated temperatures. The last statement apparently is responsible for the error in your article.

A number of research men are disturbed over the lack-of-permanence statement. . . .

KARL B. THEWS
Manager of Sales
Titanium Alloy Mfg. Div.
National Lead Co.
New York, N. Y.

Thank you, Reader Thews, for setting the record straight.—Ed.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.



Wetting Agents for
Agricultural Sprays



Commercial
Car-Washing Compounds



Dishwashing
Detergents

STEPAN synthetic detergents



Liquid, Creme, or
Paste Shampoos



For use in Dairy
Equipment Cleaners



Detergents for formulation
of Metal Cleaners



Basic Detergents used in
Food Processing



Heavy-duty Cleaners

stepanols

LAURYL
SULFATES

Available in liquids,
pastes, beads, and
flakes. Ideal for creme,
liquid creme sham-
poos, and clear liquid
shampoos.

alkyl aryl sulfonates

Available in slurries,
clear liquids, beads,
and flakes. Excellent
detergency and foam
characteristics in the
hardest waters.

petroleum sulfonates

For emulsification or
de-emulsification and
for the preparation of
agricultural sprays
and degreasers.

laboratory assistance

Complete laboratory
facilities to aid you
in developing your
product.

custom spray and drum drying

The finest in production
equipment to assure
you a uniform product
to your specifications.

Write for literature and samples

The Chemicals of Tomorrow
... Today

THE

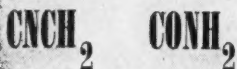
STEPAN

CHEMICAL CO.

3250 So. Kedzie Avenue
Chicago 23, Illinois

KAY-FRIES

Cyanoacetamide

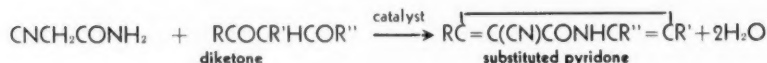


CYANOACETAMIDE (both a nitrile and an amide) is another Key-Fries intermediate with a cyano-activated methylene group. It is now used in the syntheses of vitamins and barbiturates. Potentially its usefulness can be expanded. It has been suggested as an intermediate for special resins, substituted piperidines and pyridones, new pharmaceuticals and general organic synthesis.

KAY-FRIES SPECIFICATIONS . . .

purity	• 99.0% min.
melting point	• 119.0°-122.0°C (meniscus to complete melt)
ash	• .05% max.
solubility	• 1 gm. completely soluble 9 gm.dist.H ₂ O

Typical reactions of CYANOACETAMIDE



Technical Data Bulletin Available

Write or Phone

American-British Chemical Supplies, Inc.

Selling Agents For

KAY-FRIES CHEMICALS, INC.

180 Madison Avenue, New York 16, N. Y. MUrray Hill 6-0661



Plant—West Haverstraw, N. Y.

NEWSLETTER

A new patented process will be employed by Commercial Solvents to make solid ammonium nitrate at Sterlington, La.

Advantages claimed for it: lower capital investment; cheaper to operate; quicker to build since it's simpler; particle size of product can be varied to meet customers' needs.

A pilot plant has been operating for a year; the commercial plant will be finished by next July.

The product is new, too, to CSC. Its agricultural chemicals division now sells anhydrous ammonia and nitrogen solutions.

Government money was voted last week to start the salt water research program (CW Newsletter, July 12).

Interior won't get the \$400,000 it wanted—only \$125,000 was voted; but more may be forthcoming out of the \$2 million authorization if the first year's work goes well.

About \$75,000 of the money will go into research contracts. A large part of the balance will be used to correlate independent work now going on in government and private industry.

Aim is to develop means of reclaiming marine or brackish water at low enough cost so it can be used in industry and agriculture.

One project already under way: a contract with Ionics, Inc. to reclaim brackish water in the Dakotas for irrigation.

Less fortunate was a bill to authorize a five-year research program on causes and effects of air pollution.

Industry took a dim view of the bill—which died on the vine when Congress adjourned—because three government departments, Interior, Agriculture and Public Health Service, were all tangled up in it.

Interior's Bureau of Mines and USPHS already have authority to investigate air pollution, but they want a separate appropriation for the work.

The government will also stay out of water fluoridation, if recommendations of the Delaney Committee are followed.

In its final report the Committee calls fluoridation a local problem, recommends that the House enact no legislation.

All seven members signed the report, but in an additional comment Member Miller—also an M. D. (CW Newsletter, July 12) contends that the USPHS went "beyond the scope of its duties in recommending communities to adopt water fluoridation."

Insecticide distributors will soon have volunteer workers spotting markets for them.

USDA is trying to organize a corps in the South to detect and report insect infestations in the area's 180 million acres of timberlands. USDA foresters will then check on extent, decide on control needs.

Selling direct to farmers is American Cyanamid's latest move to push Aerotil, its soil conditioning product.

Until now it's been sold only to other manufacturers, who have marketed it to home gardeners under their own trade names.

Stepped-up production, says Cyanamid, has made this move possible. It will be sold through the agricultural chemicals division. Both types (flakes and powder) will be sold in 20- and 40-lb. containers.

The deal whereby the U.S. would buy 200,000 lbs. of aluminum annually for five years (1954-58) from Alcan in Canada appears to be off. There's a good chance, though, that it may be revived before long.

Administration pressure for the deal is strong, and the Canadian government is also solidly behind it. Congressional leaders think they see the fine hand of Churchill in the shaping of Truman's policy—perhaps the result of conversations during Churchill's recent visit.

This may be the picture: Britain is now building two aluminum projects in Africa, which upon completion will turn out enough (2 million pounds a year) to satisfy British requirements—and at 4¢ to 5¢ a pound compared with 19¢ from U.S. or Canada.

At that time Alcan would have surplus output—and that's where the U.S. was supposed to come in.

Meanwhile, DPA has okayed a plan for Alcoa to buy 8.4 million pounds from Alcan now, 4 million later, to make up 13 million pounds of lost output from its storm-damaged Massena (N.Y.) plant.

Last week DPA spelled out a new dispersal policy providing that sites for large plants (over \$1 million), or those making more than 15% of the U.S. total of a product, would have to meet certain criteria in order to qualify for a certificate of necessity.

The ruling is a form of gentle pressure—not drastic. It covers only future applications. DPA may well consider pending applications from the dispersal angle, but it isn't likely to turn one down for that reason alone.

Part of the \$50 million, 20-year loan made last week to Australia by the International Bank for Reconstruction and Development is earmarked to finance production capacity for basic chemicals (such as fertilizers) coal gas, paper and paper board. Some will also go for increased pyrites and non-ferrous metals output.

Meanwhile an Australian firm, Tilley Plastics, is setting up a Los Angeles branch to sell its products—both plastics and plastic injection-molding machines—in this country.

But the two-way nature of chemical trade is pointed up by two recent Mutual Security Agency authorizations: one to France, to buy \$1,350,000 worth of synthetic rubber and rubber scrap here; the other to Germany, to buy \$623,000 worth of chemical pulp from the U.S.

Almost coincidentally with Mathieson Chemical's latest plan to merge with Squibb (see p. 13), the book was finally closed on a previous try: acquisition of American Potash & Chemical.

Stockholders of the latter firm voted to buy up and retire the 120,000 shares of AP & C held by Mathieson. The balance of Mathieson's holdings was bought by an investment firm.

Following the stockholders' meeting, the five Mathieson directors resigned from AP & C's board.

It isn't the heat—it's the humidity that has temporarily slowed Wheaton Glass Co.'s development of a glass-bomb aerosol. The humidity has interfered with the working out of a process to plastic-coat the glass containers.

... The Editors

Chemical Covering

CHEMICAL PROBLEM...

... to develop a series of products that impart flexibility to vinyl plastic coatings and sheetings.

SOLUTION...

... Hercoflex® plasticizers. These products of Hercules research put the flexibility and pliancy in vinyl coatings and sheeting and *keep them there* over long periods of exposure without cracking, drying out, or softening. Hercoflex keeps vinyl coatings pliable even in sub-zero weather.

RESULT...

... automobile upholstery that withstands the wear and tear of outdoor service ... heat, cold, abrasion, moisture ... and can easily be cleaned. Today, vinyl plastics made with Hercoflex are used for rainwear, luggage, handbags, shower curtains, garden hose, furniture, and wire coating. Other Hercules chemicals, such as ethyl cellulose and chlorinated paraffin, are also used advantageously in the processing of certain vinyl sheetings and coatings.



Hercules' business is solving problems by chemistry for industry ...



... textiles, paper, rubber, insecticides, adhesives, soaps, detergents, plastics, paint, varnish, lacquer, to name a few, use Hercules® synthetic resins, cellulose products, chemical cotton, terpene chemicals, rosin and rosin derivatives, chlorinated products and other chemical processing materials. Hercules® explosives serve mining, quarrying, construction, seismograph projects everywhere.

HERCULES

HERCULES POWDER COMPANY 992 Market St., Wilmington 99, Del.
Sales Offices in Principal Cities

from coal mine to

finished products



INLAND'S
"CHAIN REACTION"
means
QUALITY COAL
CHEMICALS

For your chemical shipping requirements, specify Inland Steel Containers . . . made in every practical size and type from three to fifty-eight gallon capacities.

INLAND
COAL
CHEMICALS



BENZOL • TOLUOL • XYLOL
AMMONIUM SULPHATE • CREOSOTE OIL
COAL TAR SOLUTIONS • PYRIDINE (crude)
NAPHTHALENE (crude) • CARBOLATE
PHENOLATE • PITCHES

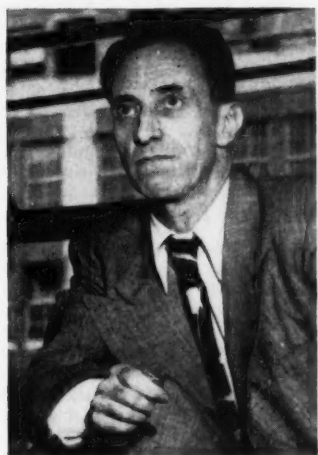
Inland-owned mines yield the high-quality coal essential to production of fine steels. From this same coal . . . further improved by washing and grading . . . Inland extracts the coal chemicals that have become known for their consistent high quality.

You can be sure of uniform coal chemical performance when these chemicals are made by this completely integrated steel company . . . where quality is carefully guarded from the mines to you.

All Inland coal chemicals easily meet ASTM specifications.

INLAND STEEL COMPANY
38 S. Dearborn St. • Chicago 3, Illinois

BUSINESS & INDUSTRY



LONGSHOREMAN BRIDGES: First licks at chemical industry.

Bridges' Cry: No Soap

Harry Bridges, the embattled leader of the West Coast longshoremen, is making his influence felt in the chemical industry this month as his union wages a strike against the Berkeley plant of Colgate-Palmolive-Peet.

The strike started last month after what the company says was a "slow-down" all through the spring months. Local 6 of Bridges' International Longshoremen's and Warehousemen's Union is demanding a 17½-cent wage increase and reinstatement of four workers who were discharged in April. The union represents some 500 Colgate employees. Current base pay: \$1.52 an hour.

Company Sues: Charging that the union sabotaged plant machinery and conducted a slow-down calculated to "vex, annoy and injure" the company, Colgate attorney Philip S. Erlich has filed suit in Superior Court in San Francisco. The company is asking \$84,548 for actual damages and \$500,000 for "sake of example and by way of punishing the defendants."

According to Erlich, the company's contract with the union expired in February; not so, claims the union. This disagreement led to the alleged slow-down.

"We can prove the slow-down," Erlich contends. "On April 4, we agreed to resume contract negotiations if the union called off the slow-down. Our offer was accepted and the work

chart for the next few days shows an increase in production."

Old Stuff to Harry: Erlich says this is the first time a company has sued for damages on the basis of workers' actions during a slow-down. But litigation is an old story to Bridges, who has spent much of his time in courts and before investigating committees during his 30 years on the San Francisco waterfront.

At present, he is engaged in appealing his 1950 conviction, in which he was found guilty of perjury for denying at his 1945 citizenship hearing that he ever had been a Communist. For his manner of defending Bridges in that trial, attorney William Hallinan—who happens to be the Progressive Party's presidential candidate this year—is serving a six-month prison sentence for contempt of court.

One aspect of the Berkeley strike: Since less than 50% of the chemical industry's hourly-paid workers are unionized now, there'll be a tendency for the unorganized workers to affiliate with any union that succeeds in winning high wages. If the ILWU wins its strike against Colgate, chemical management—particularly along the Pacific Coast—may get to know Bridges as intimately as the shipping industry knows him.

Horan's Cry: No Faith

Walt Horan, who as an apple grower for 27 years has had to contend with regulations on pesticides, last week was in strong disagreement with his fellow Delaney committee members who signed the group's report on chemicals in food (CW, July 12).

Horan, with later seconding from Rep. Tom Abernathy, states that the report's provisions would "contribute to the difficulties of our producers of foodstuffs . . . and yet add nothing of assurance to the consuming public."

"I feel very strongly that the report is reactionary and a deterrent to needed progress" in increasing food output.

As evidence of the "destructive" properties of the report Horan cites:

- Listing seven chemicals already denied access to interstate commerce as if they were still dangers to the consumer.

- Indicating that selenium may be used in agricultural insecticides where it is limited to use on only one crop.



CONGRESSMAN HORAN: Last word on additives report.

- Decrying the use of emulsifiers when "the burden of testimony would lead one to the conclusion that they are nontoxic and therefore any discussion of them is economic" rather than a question of health.

- Implying that meat from estrogen-fed poultry (except for the actual place where the hormone pellet was implanted) is harmful.

- Quoting a January, 1950, AMA statement that toxicity information on pesticides was undeveloped, but ignoring the fact that new information has since been made available.

Unlike the committee majority which advocates a "new drug" type of prior approval from the Food & Drug Administration before any chemical (either pesticide or additive) is used, Horan makes a recommendation only concerning pesticides. His view: "We should look to better use of authority already provided before concluding that additional authority is needed or could be wisely exercised if granted."

In general, however, he sees government agencies doing a good job in protecting the consumer. The whole report, he feels, tends to unnecessarily alarm people over the quality and safety of their food, and isn't constructive in proposing answers.

"Failure in this committee's report to point out, at every turn, the good work of these agencies can leave but a negative conclusion with everyone.

"We need faith in Government."



DU PONT'S STORY: History of the country as well as a company.

Pause for Reflection

Only 11 manufacturers sell over \$1.5 billion worth of goods a year; few have been in business for a century and a half. But this week, the Du Pont Co. (which last year registered sales of \$1.531 billion) belongs in both groups as it celebrates the 150th anniversary of its founding. And as part of the ceremonies, the nation's leading chemical maker has published a book, *Du Pont—The Autobiography of an American Enterprise*,* showing the parallel development of the "powder mill on Brandywine Creek" and the United States.

Just as Du Pont is no ordinary manufacturer, its "autobiography" is no run-of-the-mill volume, of interest only to dutiful employees. It's an easy-to-read book in which the "picture newsmagazine" technique is used to trace the economic and social growth of the country since 1802.

It shows how country and company grew because of each other: how the nation's needs and traditions spurred business venture, how business enterprise yielded new materials that have added to America's wealth.

The large (9½" by 12") pages of the 140-page book display the cream of the thousands of photographs and sketches the company collected and examined to recapture the spirit of the different periods depicted.

No Mere Album: But the interested reader turning pages in this book finds that it is no mere collection of pictures. In it, Du Pont makes its case for the free enterprise system

which flourished in early America: It chronicles the capital-raising activities of Irénée du Pont, the opportunity for work the new venture gave to Irish immigrant David Murphy who had no capital, the responsibility the founder felt toward his employees (not paternalism but "mutual respect and regard"), the insistence upon quality and product improvement to win customers' confidence.

Flipping through the years, you come to a company with problems different from those it has faced before. Du Pont says they are these:

- **Bigness.** This is the first problem, arising, Du Pont says, from the theory that if corporations upon reaching a certain size do not divide, there is no limit to their size and "power."

The company viewpoint: Customer preference will regulate a corporation's growth to a size at which it can most effectively serve these customers.

- **Anti-Trust Action.** Du Pont declares itself in agreement with the aims of the Sherman Anti-Trust Law, but says present legal interpretations cause confusion. It says companies fear to risk capital on ventures that may be penalized for success.

- **Markets.** Here Du Pont, obviously defending itself against charges of monopoly, says that products compete for markets on the basis of the function they serve: Nylon, for example, competes with all fabrics; there is not absence of competition just because there may be only one maker.

- **Incentives.** Du Pont fears the stifling of individual initiative through

high personal income taxes which discourage acceptance of responsibility, and high corporate taxes which discourage investment, tend to dampen enthusiasm for expansion into new fields.

Public Test: But Du Pont expresses confidence in solving such problems. It points to its century and a half of success as a measure of public sanction of its operation; has no doubt of the public's continued sanction "if on any issue . . . (Du Pont) rests its case before an American public having full understanding of the facts."

Partial Forgiveness

Two chemical companies that shipped aluminum oxide to Soviet-controlled Hungary will be out of the export business for awhile—but their original suspension sentences have been scaled down because of a feeling that bad publicity also is a kind of punishment. The fact that the two firms at first got the maximum penalty might be related to the fact that their violation was discovered during a time when this country was particularly irked at Hungary, because Hungary was holding some U.S. Air Force men for ransom.

Belgium a Way Point: The case involved trans-shipment of the oxide from Belgium to Hungary back in 1949 and 1950. The A. E. Ratner Chemical Co., New York, and Continental Pharma of Brussels, Belgium, and Montreal, Canada, were charged with violation of export regulations in concealing the real ultimate consignee and destination.

After thinking things over and after receiving "consent proposals" from the two companies last month, the Appeals Board of the Bureau of Foreign and Domestic Commerce decided to soften the blows. Pharma is banned from obtaining U.S. export licenses for two years, and Ratner's suspension has been whittled to five months.

Impatient Citizens

Only a couple of weeks after eight companies chipped in \$50,000 for a survey to determine which plants were making how much smog, citizens of Louisville, Ky., are calling for the shut-down of one of those plants.

Without waiting for a report on the findings of that survey, a group calling themselves the Joint Committee on West End Air Pollution has demanded that the City-County Health Board close the Louisville plant of National Carbide Co.

Doctors Lend Support: To back their demand, the Committee is displaying a letter signed by ten physi-

* Charles Scribner's Sons, New York, \$5, but free to employees and pensioners.

cians of Louisville's West End. This letter states that the fumes from the "Rubbetown" district contain substances "irritating to the eyes, nose, throat and bronchial tubes," but does not single out National Carbide as a prime offender.

The Committee argues that a Health Board order issued in 1945 for the closing of the plant still is valid and should be enforced. Health Board Director C. Howe Eller says he is not sure whether his agency or the newly created City-County Air Pollution Commission should take action.

When told that the citizens' committee is on the warpath against the Carbide works, Plant Manager Carl E. McKim tersely remarked: "No comment."

Money In Stills

Men who operate the stills—particularly the catalytic cracking stills—are getting the best wages in the nation's petroleum refining business this year, with average pay ranging from \$2.32 to \$2.43 an hour.

Second best-paid category of workers in this business is the maintenance department. Here, wage rates run from \$2.22 for maintenance pipefitters to \$2.25 for instrument repairmen.

Best Pay in East: Refineries in New York, Philadelphia and New Jersey currently are offering higher wages than those in all other parts of the country, according to this latest study by the Bureau of Labor Statistics.

Next in line in this respect are the refineries along the Texas Gulf Coast, and third are the refineries in Los Angeles and vicinity. However, there is considerable variation in pay scales within each area. In general, wages are better in large refineries and in large cities. Western Pennsylvania refineries have the lowest wage rates.

At the bottom of the wage scale are the laborers and janitors. Three-fifths of the refinery laborers in the country are receiving less than \$1.65 an hour, and only 2½% were getting as much as \$1.80 per hour.

Over-All Up 10%: The general level of hourly wages in the refinery business is 10-14% higher than when the B.L.S. looked at this business three years ago. More than half of the individual job averages now are between \$2 and \$2.25 an hour.

Average gross hourly earnings for refinery production workers have climbed during that period from \$1.87 to \$2.09 an hour, while the national average for all manufacturing industries rose from \$1.39 to \$1.63 in the same three years.

Regional averages for the top-paid

catalytic cracking stillmen: New York, \$2.65; Philadelphia, \$2.58; Texas Gulf Coast, \$2.48; Great Lakes, \$2.47; Mountain States, \$2.43; Middle West, \$2.32; Oklahoma, \$2.26; and Los Angeles, \$2.24 an hour.

For laborers: New York, \$1.76; Great Lakes, \$1.70; Pacific, \$1.68; Philadelphia, \$1.63; Middle West, \$1.60; Southwest, \$1.55; Mountain States, \$1.55; and Western Pennsylvania (excluding Pittsburgh), \$1.35.

New Firm, New Feather

Mathieson Chemical this week took another step in the diversification program which has been a keynote since T. S. Nichols took over as company president four years ago: The company will acquire E. R. Squibb & Sons via an exchange of stock.

To Mathieson, the merger will mean a diversification about on a par with its 1950 decision to move from the inorganic field into petrochemical organics. Then, it joined with Tennessee Gas Transmission in forming Mathieson Hydrocarbon.

An earlier hint of Mathieson thinking about the drug field was the establishment two months ago of a sales branch to market pharmaceutical intermediates. First two products: drug grades of hydrazine and sodium methylate, though more will be coming, in good part from its Doe Run, Ky., petrochemical facilities.

Here's How: The merger plan, which still must be approved by the stockholders of both companies, calls for exchange of three shares of Mathieson common stock for each five of Squibb common. This would mean that Mathieson would have to increase its authorized common stock from 4- to about 6-million shares.

For the shares it hands out, Mathieson will get an ethical drug house with a 94-year history in the manufacturing and distribution of drugs and medical specialties. Unlike some of its fellow drug leaders, it hasn't been hit by the financial lightning of an exclusive antibiotic, e.g., aureomycin, but its research potential has been shown in such ways as its development of dihydrostreptomycin, which has completely shadowed the parent drug.

Mathieson, while it will operate the drug firm as a division, will continue to use the Squibb name, undoubtedly a most valuable part of the over-all purchase.

Here's Why: The advantages of the merger to the Palmer and Weicker family interests, which control Squibb, are not limited to the dollar profit they will make. Major is that it will simplify tax matters since Mathieson, unlike Squibb, is an actively traded stock where sale of family holdings would not seriously depress the market price of the stock.

But above all, the merger was another plume in the already well-feathered cap of Mathieson's empire-building Nichols.

CURRENT LIST OF DPA-CERTIFIED CHEMICAL FACILITIES

Company, Location	Product	Amount Certified	% Certified
National Cylinder Gas, near Pittsburgh, Pa.	Liquid oxygen	\$ 926,250	55
Inland Oxy-Acetylene, Spokane, Wash.	Oxygen	63,465	45
Diamond Alkali, Painesville, Ohio	Chromic acid	195,450	45
Kawecki Chemical, Boyertown, Pa.	Titanium, zirconium fluorides	20,308	70
American Pigment, Hiwassee, Va.	Iron oxide pigments	125,000	50
Dow Chemical, Midland, Mich.	Ethylene dibromide	1,948,000	85
Humble Oil & Refining, Baytown, Tex.	Propylene, butylene, butanes	3,650,000	65
Pathfinder Chemical, Point Pleasant, W. Va.	Styrene	11,496,320	60
Dow Chemical, Freeport, Tex.	Styrene	9,400,000	60
Dow Chemical, Midland, Mich.	Styrene	3,250,000	60
Pennsylvania Industrial Chemical, Jefferson, Pa.	Styrene	3,807,650	50
Carbide & Carbon Chemical, Kanawha County, W. Va.	Styrene	1,081,708	60
Marbon Corp., Gary, Ind.	Styrene	70,045	60
Texas Eastman, Harrison, Tex.	Synthetic hard wax	3,800,000	50
United States Plywood, Portland, Ore.	Phenolic resins	56,985	45
Dow Chemical, Midland, Mich.	Vinyl resins	10,307,600	45
Dow Chemical, Allyn's Point, Conn.	Vinyl resins	9,982,000	45
Dow Chemical, Freeport, Tex.	Vinyl resins	5,930,000	45
Union Carbide & Carbon, Texas City, Tex.	Vinyl resins	13,837,000	45
B. F. Goodrich Chemical, Calvert City, Ky.	Vinyl resins	5,871,100	45
General Tire & Rubber, Calvert City, Ky.	Vinyl resins	5,319,000	45
U. S. Rubber, Painesville, Ohio	Vinyl resins	3,297,725	45
Diamond Alkali, Deer Park, Houston, Tex.	Vinyl resins	2,526,000	45
Shawinigan Resins, Springfield, Mass.	Vinyl resins	1,052,950	45
National Starch Products, Plainfield, N.J.	Vinyl resins	253,475	45
Monsanto Chemical, Springfield, Mass.	Vinyl resins	92,000	45



FOR PLANT SECURITY: Man-proof fences, vigorous guards, "loyalty screening."

Alert for Alarums

Large chunks of cash will be needed to make new chemical plants meet the new "security" standards now desired by the Government for all industrial facilities—especially those vital for defense.

Plants conforming to the pattern set out in a Department of Defense booklet (*CW Newsletter*, July 12) issued this week will resemble an army barracks more than the old-style, open-door shop that was as accessible as the corner saloon.

Prepared for A-Bombs: The Munitions Board's Office of Industrial Security tries hard not to overlook anything that might help a plant resist espionage, sabotage, or outright attack. One of the recommendations: "New (air raid) shelters . . . should provide against the A-bomb. In addition to the usual required facilities and comforts, new construction or plans therefor should permit the installation of an air filter system as protection against chemical, biological, or radiological warfare media."

Management is not yet required to use all these measures; their use is voluntary except as may be specified in defense contracts, and the Government isn't offering to help pay for these safeguards.

Safeguard Production: Critical production equipment, such as valves, transformers, switches and controls should be protected from any damage that could cause a production slowdown, the Government urges.

Three full chapters are devoted to

means of keeping tab on who and what comes in and goes out of the plant. "Man-proof" fences are advocated for enclosing all manufacturing, production and storage areas. Openings in these fences should be kept to a minimum, and should be constantly guarded or locked.

On both sides of the fence, there should be an open area, and the fence and these open areas "should be well lighted during the usual hours of darkness and during periods of low visibility."

Tough Loyal Sentries: "A sufficient well organized guard unit should be maintained," the security recipe continues. "All guards should be carefully screened to assure that they meet . . . citizenship and loyalty qualifications. Guards should be physically strong, vigorous, mentally alert, of legal age, and not over 60."

Each plant should have "a practical system of positive identification" for all employees, and identification badges should be "of tamper-proof design and construction." Admittance and movement of visitors should be "rigidly controlled."

"Plant management, at all times, should maintain close liaison with the nearest office of the FBI," the manual instructs. Employees and visitors should be screened to eliminate "all potential espionage and sabotage agents."

Most large plants already have plant security systems that include many of the measures recommended

in "Standards for Plant Protection." The prospect is that, with no let-up in international tension in sight, these standards will come to be widely accepted throughout U.S. industry. In the case of new plants now being planned, companies probably will find it cheaper to have security features "built in" rather than added after the new plant is occupied.

A-Miners Thrive

Ambitious bureaucrats that have been wanting to set up a new protection service for uranium miners in the West were tossed for a loss this week—the U.S. Public Health Service announces that a survey has shown no need for special protection.

More than 1,100 workers in uranium mines and mills of Colorado, Utah and New Mexico have been given detailed physical examinations, and the Health Service reports "no evidence of health damage from radioactivity."

U.S. Miners Better Off: In comparing conditions in U.S. and European uranium mines, Dr. Seward E. Miller, chief of the Division of Occupational Health, notes that American workers have "several advantages."

For one thing, U.S. mine operators have been told of those instances in which their mines had dangerous amounts of radiation, and have been taking steps to reduce their radiation levels. Secondly, Yankee miners don't work as many hours per day or week as their European counterparts, and hence are not exposed to so much radiation. And third, American mines have been run on a one-shift basis, so workers usually are not exposed immediately following blasting, when dust and radiation levels generally are highest.

COMPANIES.....

Lion Oil has awarded Chemico the design, and Lummus the construction contracts on its \$31 million ammonia/ammonium nitrate plant to be built at Luling, La. The plant is expected to come onstream early in 1954.

Continental Oil has purchased the Chicago synthetic detergent plant manufacturing facilities of the Stepan Chemical company. Other operations of Stepan are not concerned in the purchase. The Chicago facilities will give Conoco an integrated set-up for detergent manufacture, since the company now produces detergent raw materials at its Baltimore facilities.

Deere & Company has received stockholder approval for entering the chemical field through production of am-



WHAT DOES OUR BASIC POSITION IN PLASTICIZERS HAVE TO DO WITH

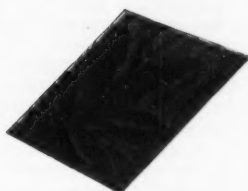
Simply this: Thousands of useful new products—like floor tile for your home, protective coverings for guns . . . and Mrs. Brown's new plastic upholstered chair are being made today of durable, flexible vinyl plastics.

To a large extent, it's the *plasticizers* used in making these vinyls that give them their good characteristics of *flexibility* and adaptability to so many useful forms.

But *how good* these characteristics depends upon the uniform high quality of the plasticizer. *That's where our story fits in.*

For we're able to control quality at every step in the production of Pittsburgh PX Plasticizers—from coal to finished product—because of our unique position as a *basic* and *integrated* producer.

Does it all add up? Plastics manufacturers will tell you that it does. For they've learned to count on the broad family of PX Plasticizers for consistent high quality and dependable deliveries. You'll experience these same basic benefits when you buy products from any of our other integrated divisions . . . products that are recognized, first and foremost, for their reliability.



Boltaflex Poinsettia Pattern

DiButyl Phthalate

DilsoOctyl Phthalate

DiOctyl Phthalate

DilsoOctyl Adipate

DiOctyl Adipate

DiButyl Sebacate


DilsoOctyl Sebacate

DiOctyl Sebacate

TriCresyl Phosphate

TetraHydroFurfuryl Oleate

PLASTICIZER DIVISION



PITTSBURGH

COKE & CHEMICAL CO.

Grant Building • Pittsburgh 19, Pa.

W&D 4088

COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

monia and urea (CW, July 5, *et priori*).

• **Union Carbide & Carbon** has received the unanimous approval of the Greenburgh, N.Y., council of its plan to move executive offices out of New York City (CW, June 28). Carbide's purchase of a 280-acre plot of land was contingent on the council's approving change in zoning.

• **United Dye and Chemical** stockholders will vote late this month to increase the company's authorized common shares from 150,000 to 2,500,000.

• **Phillips Petroleum** has been chosen to operate the Bluebonnet ordnance plant at McGregor, Texas, which will produce the hydrazine-powered "Jato" units.

• The company, incidentally, has set up a rocket fuels division in its research and development department.

• **Virginia-Carolina** has borrowed \$5 million from an insurance company source. The terms of the agreement call for 10 equal repayments beginning in 1957. Over-all interest rate on this and a similar borrowing consummated in 1948 is 3.79%.

EXPANSION.

Coal Tar Products: Koppers will initiate its tar derivative production at Fontana, Calif., this week, producing roofing pitches and tar-base enamel pipe-line coatings.

• A large tar processing still, now under construction, must go into operation before other products can be manufactured.

• **Ammonia:** Mississippi Chemical has authorized an \$8 million expansion of production of anhydrous ammonia at Yazoo City, Miss. Construction will begin in the fall on the 120 ton/day ammonia and 150 ton/day ammonium nitrate facilities, which will approximately double plant capacity for the farmer-controlled corporation.

• **Polyester Resins:** General Electric has begun production of polyesters at its Anaheim, Cal., plant.

• **Bauxite,** of a low quality grade, has been found in British Columbia, about 200 miles from the Kitimat, B.C., site of Aluminum Company of Canada's new aluminum reduction plant. The plant, however, has been scheduled to use bauxite imported from Jamaica.

ICI Shrinks Dollar Deficit

While much of the news emanating from Great Britain these days has been that of crisis and devaluation, there was one good not-so-gloomy note for the British: Imperial Chemical Industries has upped its exports to where it now brings the country better than \$3 million worth of foreign exchange each week.

As such, it is now Britain's largest single source of foreign exchange, with direct exports of \$163 million in 1951, up 21% over 1950. Its total sales were up 19% to \$740 million; and pre-tax profits, up \$112 million, almost a third over 1950.

Much of this record could never have been made if ICI hadn't plowed an increasing amount of capital into new plant capacity. Expansion here in the U. S. is taken as a matter of course, and in most cases has been aided and abetted by government tax amortization certificates. But ICI had just about the opposite to contend with.

The British government, in order to reduce the demand for imported materials and in order to encourage export of as much capital equipment as possible, seems to have set up a studied policy of discouraging capital investment.

Hence, the fact that ICI has spent better than \$252 million on expansion, and will put a further \$218 million (at today's prices) into present projects becomes even more remarkable.

Parts of this policy are evidenced in the upping of interest rates and in the fact that all new capital issues must be approved by the government before they can be floated. And the government is ruthlessly suspicious of all new offerings.

ICI, however, raised \$28 million last February, and just a few weeks ago received permission from stockholders to sell \$70 million worth of stock. This would bring the authorized capital to \$336 million.

Works in the Works: ICI's biggest present expansion program is on the River Tees in County Durham, where both its Billingham and Wilton works are located. Of 10 postwar expansions at Wilton, a chlorine plant is about to go onstream, units producing α -naphthylamine, urea-formaldehyde resins and polyethylene came into production late last year, close on the heels of units producing formaldehyde, ethylene oxide, detergents and olefins.

Still under construction at Wilton are two further polyethylene units, phthalic anhydride facilities and the

first commercial-size (10 million lbs/yr) plant for production of Terylene. (Du Pont, licensing ICI patents, is building Dacron facilities here in the U. S.)

Across the river at Billingham, new plants have gone on stream for nonanol, sulfonate detergents, acetone, isopropanol and methylamine. The division's fertilizer capacity was boosted 100,000 tons a year (to 800,000 tons) by construction of a plant to produce nitro-chalk fertilizer (calcium carbonate plus ammonium nitrate).

ICI's Nobel division is planning a new explosives factory, and will add pentaerythritol capacity.

The dyestuffs and pharmaceutical division is planning to triple nylon output, and is momentarily expected to be onstream in Manchester with a plant to produce its Monastral Blue pigment.

All this adds up to more dollars for Britain, more competition for U.S. firms in foreign markets.

Martial Miners

One of the more aggressive labor unions on the continent, the International Union of Mine, Mill & Smelter Workers, is threatening action that could cut off 90% of the world's nickel and 25% of the nation's tungsten supplies.

Mine-Mill has ordered a strike against International Nickel Co. unless the firm grants a 28½¢ hourly wage increase to its miners in the nickel belt around Sudbury, Ontario; but production is continuing there while a conciliation board in Toronto debates the issues.

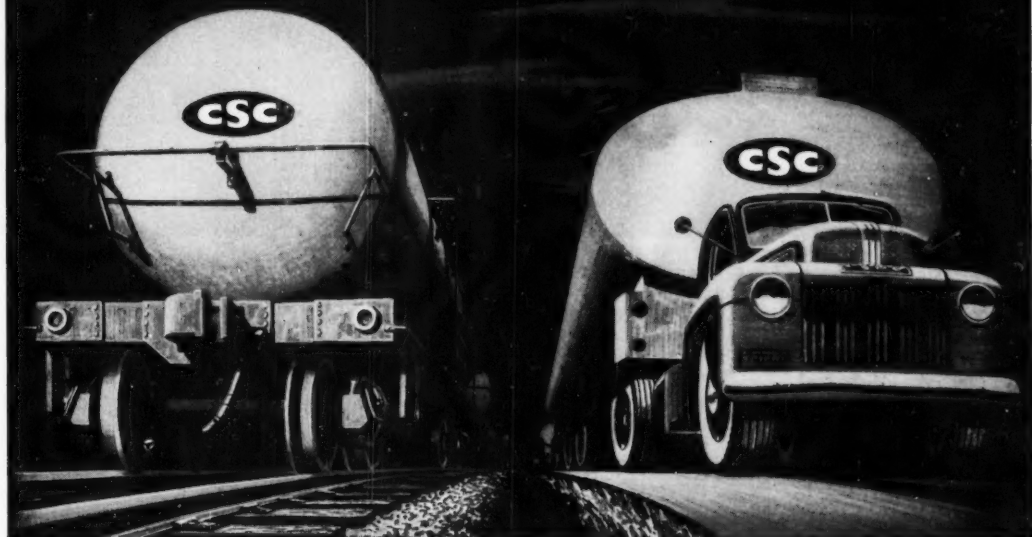
In East and West: On the other side of the continent, Mine-Mill adamantly continues to strike at the Mill City tungsten mine of the Nevada-Massachusetts Mining Co. near Winnemucca, Nev., in protest against a WSB ruling. The miners had asked for a boost from \$1.43 to \$1.83 an hour; the company agreed to pay whatever the WSB would allow; the WSB recommended \$1.65; the union appealed, then struck.

Chairman P. R. Bradley, Jr., of California's State Mining Board says that demands for wage rates asked by Mine-Mill could shut down "fringe" producers now supplying one-fourth of all tungsten to the U.S.

The nickel miners in Canada struck briefly at one mine last week, returned to work within a matter of hours. A company spokesman said their work-week had been cut from 48 hours in 1950 to 44 hours in 1951.

CSC ETHYL ALCOHOLS and DERIVATIVES

...Ready to Roll from Coast to Coast



Usage for industrial alcohols has reached an unparalleled level during the past decade . . . creating a demand that Commercial Solvents Corporation, a pioneer in alcohol research and production, has answered by producing more ethyl alcohols and derivatives for the chemical industry.

Over the supply lines of America move the CSC fleet of tank cars and tank trucks, bringing these essential chemicals to industry from its nationwide network of strategically located plants and distribution points...ready to offer you unsurpassed service.

CSC ethyl alcohols are available in all formulas and grades to meet the most exacting requirements of the pharmaceutical and industrial trades.

ALCOHOLS

Rossville Hexagon® Cologne Spirits
Rossville Algrain® Alcohol U.S.P.
Rossville Gold Shield® U.S.P.
Shellacol®

Quixel®

Quakersol®

DERIVATIVES

Ethyl Acetate • Diethyl Maleate • Acetaldehyde

Write or phone Commercial Solvents Corporation, Industrial Chemicals Division, 260 Madison Ave., New York 16, N. Y. for full information.

OTHER CSC CHEMICALS

Butanol	Aminohydroxy Compounds
Butyl Lactate	Riboflavin Crystals
Butyl Acetate	Hydroxylammonium Salts
Butyl Stearate	Nitroparaffins
Dibutyl Phthalate	Formaldehyde N.F.
Tributyl Phosphate	Pentaerythritol
Methanol	Acetone
Ammonia	Methylamines

INDUSTRIAL CHEMICALS DIVISION

CSC COMMERCIAL SOLVENTS CORPORATION

ALDEHYDES • ALCOHOLS • ESTERS • AMINES • AMINOALCOHOLS
AMMONIA • NITROPARAFFINS • SOLVENTS • PLASTICIZERS • INTERMEDIATES

July 19, 1952 • Chemical Week

17

Don't take a jump in the dark toward your new plant site

by don harold

Get all the light you can!

Sometimes plant sites are selected by whim
... or sentiment ... or chance!

They *should* be selected by economics ...
by mathematical calculation, plus consideration
of certain human factors.

Where will production cost be least and
profits be greatest? Where will employees be
happiest? Where will customers best be served?

B&O's Industrial Development (plant
location) men will help you add up *all* the factors,

profit-wise. They will help you consider all
the angles ... scientifically, financially and
humanely ... without cost or obligation.

These men helped locate on the B&O over
a billion dollars' worth of plants in recent years.

No matter *which* you place *first*, these
fellows will help you appraise: POWER,
WATER, LABOR, FUEL, TRANSPORTATION,
TAXES, MARKETS, WEATHER, RAW MATE-
RIALS, SITES, and other factors to meet your
own particular needs.

The B&O says "Ask our man!" Write or
phone B&O's Industrial Development men at:

New York 4 Phone: Digby 4-1600
Baltimore 1 Phone: LExington 0400
Pittsburgh 22 Phone: COurt 1-6220
Cincinnati 2 Phone: DUbar 2900
Chicago 7 Phone: WAsh 2-2211

They'll provide *comprehensive* plant loca-
tion surveys without cost to you, and will
keep as "mum" as a Baltimore oyster.



The heart of America's markets and
the treasureland of the "lion's share"
of America's industrial resources.



BALTIMORE & OHIO RAILROAD

Constantly doing things — better!

and now to 40 hours, and that miners' wages had been raised in June and December last year.

Keeping an apprehensive eye on the situation are chemical process industries men responsible for plant expansions—inevitably dependent on nickel-containing equipment.

Tiff On Standards

Chemical standards and other specifications are the kernel of a disagreement that broke out in the International Organization for Standardization as it closed its general assembly in New York last week.

United States delegates, members of the American Standards Association, want the ISO to adopt the standards already drawn up by the International Union of Applied Chemistry and by similar bodies.

I. G. Kourakov, leader of the Soviet delegation, insists that such codes be studied by ISO technical committees to avoid the adoption of standards that might be "limited in scope and biased." Dr. Lal C. Verman of India's delegation is trying to mediate the issue.

New president of the ISO is Dr. Hilding V. Törnebohm, vice-president and technical director of SKF Industries, Göteborg, Sweden.

Salary Lid Ajar

Chemical engineers are among the several million employees for whom the lid on salaries has been tipped open by recent amendments to the Defense Production Act.

However, in order to qualify for this no-ceiling-on-salary provision, the employee must actually be working in a "professional capacity," the Salary Stabilization Board insists.

Among the tests to determine eligibility: holding a college degree in engineering, a license to practice as an engineer, and engaging in engineering work of a professional character as defined in the wage-hour law. An engineer is not considered to be employed in a professional capacity if he works as an executive, an administrator, or in outside sales work.

'Ghost' Lingers On

The union-shop clause in the contract between the Bare Paper Co. of Roaring Spring, Pa., and the United Paperworkers (CIO) has been consigned to a ghostly existence—it stays in the contract but it has no substance. That's the ruling of the National Labor Relations Board. It declares the clause illegal and unenforceable because it was negotiated by a union

that has not filed non-Communist affidavits or financial reports with NLRB.

The Board's three-man majority says that since the clause is not valid, there is no need for employees to vote on having the clause canceled. The two-man minority argued that the employees should have been permitted to hold the election, because the clause will tend to have a restraining effect on the workers as long as it stays in the contract, and the situation would be clarified by having that clause voted out of existence.

FOREIGN.

Nigeria, which has been negotiating with American Smelting & Refining over development of lead and zinc deposits, has passed a law which exempts such firms from taxation until they have been marketing their output for five years. Also, such firms can sign leases for 60, instead of the former 21 years.

The German Titangesellschaft m.b.H., formerly owned 50-50 by National Lead and I. G. Farben interests has now become a wholly owned National Lead subsidiary. The German-held capital stock was purchased by the U.S. interests in an agreement approved by the Allied Control Council.

• Titangesellschaft's plant at Leverkusen (British zone) has an output of titanium dioxide pigment adequate to supply all requirements of Western Europe. Its ilmenite raw material will come from National Lead holdings in Norway, and other raw materials will be furnished by Farbenfabriken Bayer under contract.

• Australia's new policy of restricting imports will find an exception in the case of antibiotics. If antibiotics (or other essential drugs) are in short supply, the government will not refuse to issue import licenses.

Parke, Davis will erect a new manufacturing laboratory near Caracas, Venezuela, where it will manufacture many of its "more than 1,000" drug products.

LABOR.

Monsanto Pay Hike: Monsanto Chemical Co. has increased wages at its plants in Springfield, Mass., and Texas City, Texas. At the plastics division plant in Springfield, more than 1,200 production employees will receive a 6¢ hourly increase, effective July 21. This will bring pay rates up to 35¢ above the July 1950 level. The pay rise at Texas City, coming just a few hours before a strike deadline set by the Galveston Metal Trades Coun-



Peace Pipe, New Style

A SALMON fillet has replaced the once-traditional peace pipe as Quinault Indian Chief Cleve Jackson (left) seals a 34-year logging contract over more than 35,000 acres by handing

Rayonier boss Clyde Morgan a prize salmon specimen.

Rayonier will use the logs as raw material for its Washington chemical pulp operations.

Come to ARMSTRONG

World Leader in Plastic
Sealers for Chemical Plants

CHLORO-Seal

Chlorine producers save money using this famous plastic compound for sealing in and out pipe and cover joints in chlorine cell operations. CHLORO-Seal stays ELASTIC. It gives permanent protection—providing a cushion seal that won't crack or chip off due to expansions and contractions. Good for temperatures to 300 F. Try CHLORO-Seal for perfect satisfaction!

ACID-RESISTANT CEMENT

For sealing joints in lines carrying liquids or gases at HIGH temperatures, use THARCO Acid-Resistant Cement.

Let us help you with ANY special sealing problem.

The
ARMSTRONG COMPANY
241 S. Post St., Detroit



ANIMAL OILS



VEGETABLE OILS



FATTY ACIDS

AND HEAVY CHEMICALS



Welch, Holme & Clark

COMPANY INC.

439 West Street, N. Y. 14, N. Y.
Warehouses in N. Y. and Newark, N. J.

BUSINESS & INDUSTRY

oil, amounts to from 9¢ to 12¢ an hour for some 600 workers.

Technicality Decides: The CIO Gas, Coke & Chemical Workers lost their bout with National Carbon Co.'s Cleveland division on a technicality. The union had complained to NLRB that the reason it lost a 641-637 election at the plant was that the company announced a wage increase just before the voting. However, the union failed to send a copy of its charges to the company, and because of this lapse of protocol, the NLRB voted three to two against upsetting the election.

ICWU Briefs Organizers: Wage stabilization and pension plans were the main topics at the annual organizers' conference held this month by the International Chemical Workers Union (AFL) at its vacation resort at Lake Catchacoma, Ontario. Speakers at the four-day briefing on next year's campaigns were Gordon Cushing, Ottawa, secretary-treasurer of the Trades and Labor Conference of Canada; Boris Shishkin, Washington, chief economist of the AFL; and H. A. Bradley, Akron, president of ICWU.

Electro Met Hikes Pay: New contracts with United Gas, Coke & Chemical Workers (CIO) provide for 13¢ wage increases at two W.Va. plants of Electro Metallurgical Division of Union Carbide & Carbon. The plants are at Alloy and Parkersburg.

J-M Adds Holidays: Johns-Manville's new pact with District 50, United Mine Workers, calls for 10 legal holidays each year, six of them paid, plus an 8% general wage increase and a "liberalized" vacation plan. This contract covers the plant at Billerica, Mass.

Niagara Grants Benefits: The CIO Gas, Coke & Chemical Workers are claiming 16 "major improvements" in their new contract with Niagara Alkali. Among them: 7¢ wage boost, \$11-a-day hospital benefits, increased shift increments, up to four weeks' vacation for 25 years' service, and pay for holidays falling within vacations.

Hefty Pay Rise: Midvale Co. of Philadelphia will raise pay for 30 chemical and research workers by 18½¢ an hour under a new contract with Local 17-26, Engineers, Technical & Clerical Federation. A company spokesman says the agreement is similar to one signed last month to cover 3,000 production and maintenance workers.

Sues Firm and Union: A production

worker in the Goodrich plant at Akron is suing both the company and the union, Local 5 of United Rubber Workers (CIO), charging that they were unfair in suspending him. According to the petition filed by George Chordar, another employee hit him with some building material and Chordar warned the other workman not to do it again. The union took this up as a grievance, alleging that Chordar had threatened a fellow worker. The company then suspended Chordar "indefinitely." Previously, Chordar claimed to have been beaten up by fellow union members "because I built more tires than the union prefers."

Office Workers Covered: Whitehall Pharmacal's new contract with the CIO Gas, Coke & Chemical Workers provides for merit promotions for office workers at the plant in Bergenfield, N.J. Salaries for these clerical workers range from \$150 month for a three-month trial period to a \$240 monthly maximum.

Southern Wage Increase: Virginia-Carolina Chemical Corp. is raising wages for all its employees at Dothan, Ala., by 6¢ an hour, retroactive to June 1, according to Local 12622 of District 50, United Mine Workers.

Chemical 'Blue Chips'

More than twenty chemical and petrochemical companies have been singled out this month as best bets on the stock market.

These companies were selected for the listings because of their earning and dividend records in the past five years and because of their prospects for future profit-making.

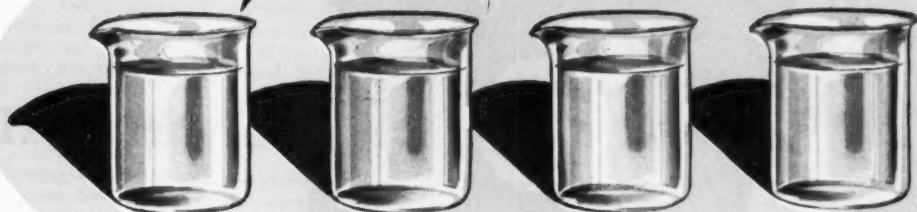
'Favorite Fifty': One of the lists being circulated by investment houses shows the 50 companies whose stocks have been favorites with 58 closed-in trusts and more than 100 mutual funds. The list was compiled by Aigeltinger & Co.

It shows, for example, that as of last year-end 49 of those trust funds held \$26.3 million worth of Monsanto Chemical Co. stock. This was the equivalent of 249,000 shares, or 5.12% of all of Monsanto's outstanding stock.

Classified by industry, chemicals ranked second only to oil and gas stocks as favorite holdings for the trust funds. (Oil and gas companies, of course, would take in much of the petrochemical industry.) Those trust funds had put 40.5% of their money in oil and gas shares and 12.1% in chemical stocks.

'Blue Chips': Nominated by E. F. Hutton & Co. as "coming blue chips"

**BUY POLYOLS
ON FACTS...**
Compare all four!



FACT: Sorbitol leads in uniformity

Polyols made from a wide variety of raw materials are bound to vary widely from batch to batch. But sorbitol, made from sugar, *always* is uniform.

Sorbitol, tested independently, showed no significant variation among twenty samples. But the same tests found wide variations in batch after batch of other polyols!

FACT: Sorbitol leads in price stability and availability

Atlas sorbitol, made from sugar, is available in almost unlimited quantities. What's more, on price stability alone, sorbitol rates the "best buy" in polyols: its price trend through the years has been downward.

Write today for the valuable 22-page Atlas sorbitol book containing charts, usage tables, and other helpful data. Personal technical assistance is available at your request.



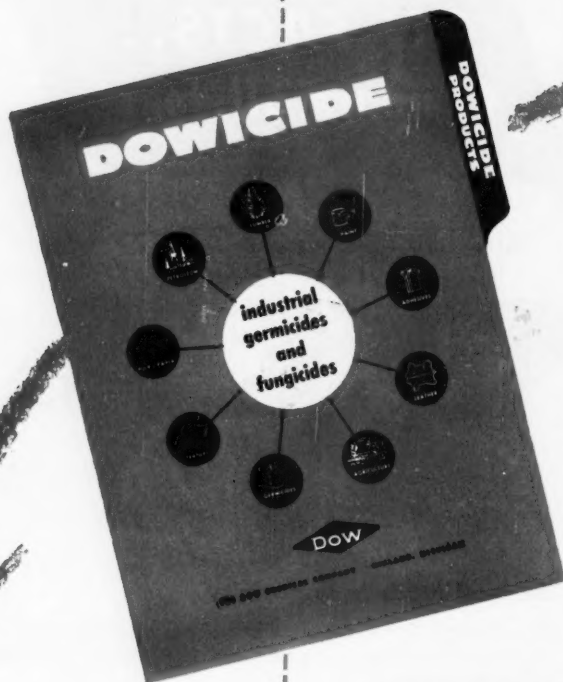
Industrial Chemicals Department

ATLAS POWDER COMPANY

WILMINGTON 99, DELAWARE • OFFICES IN PRINCIPAL CITIES

ATLAS POWDER COMPANY, CANADA, LTD., BRANTFORD, CANADA

The Complete Story of Proved Protection against Mold and Bacterial Attacks!



FOR PROVED PROTECTION
against
MOLD
and
BACTERIA

mail this Coupon Today!

The Dow Chemical Company
Dowicide Division, Dept. DC-121A, Midland, Michigan

Please send me the Dowicide Product Information File.

Name _____ Title _____

Company _____

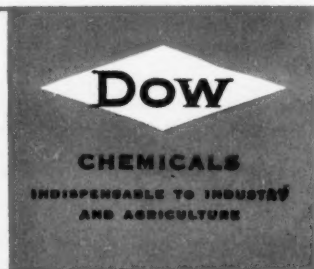
Street _____

City _____ State _____

I am interested in using Dowicide Products for _____

For the first time Dow offers you this easy-to-use, comprehensive file of information on Dowicide products . . . the time-tested industrial germicides and fungicides. The Dowicide product file tells how you can bring effective, economical microbial control into your plant. It assembles under one cover many suggested uses for Dowicide preservatives. In addition, it gives their formulas as well as their chemical and physical properties. Free your plant from costly attacks of mold and bacteria today. Send for your copy of the Dowicide product information file without obligation.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN



were four chemical companies and one oil firm: Aluminium, Ltd.; American Cyanamid, Celanese Corp., Mathieson Chemical, and Phillips Petroleum.

Stocks in those companies all had good earning records back to 1939 or before, and dividends are expected to be \$2 or more per share. Current prices range from \$40 for Celanese up to \$114 for Cyanamid.

"For its shares to be a 'blue chip,' a company must have rather exacting qualifications," Hutton remarks. "It must be a dominant factor in a growing or relatively stable industry. It must have a long record of consistent earning power, a strong financial position, and a history of continuous dividends. Obviously, . . . the company must have excellent management, but even more important, it

must have demonstrated that it is able to continue the quality of this management over a period of time."

One Rubber Company: Only one rubber firm, B. F. Goodrich, is listed among the "Favorite Fifty" stocks in the folder being distributed in New York by Kidder, Peabody & Co.

Chemical process companies besides Monsanto on this list are Union Carbide, Dow, Du Pont, American Cyanamid, Aluminium, Johns-Manville, Celanese, American Viscose, Pfizer, and National Lead.

Oil and petrochemical firms among the "Favorite Fifty" are Amerada, Standard of New Jersey, Gulf, Continental, Texas Co., Standard of California, Phillips, Standard of Indiana, Humble, Skelly, Socony Vacuum, Cities Service, Pure, Shell and Ohio Oil Co.

Hyperthyroid Industry

Growing even faster than its parent chemical industry, the petrochemical business is boosting its production 14% each year and gross investment in its plants may reach \$7 billion within the next 10 years.

This was the petrochemical picture as drawn by a New York stock brokerage house in describing this business with "boundless horizons—the end of expansion has not yet been sighted."

"Petrochemical production has increased 1,000-fold to a present rate of 14.5 billion pounds annually," said a market specialist for E. F. Hutton & Co. He foresaw a continued rise in output of products from petroleum and natural gas to a total of 65 billion pounds a year by 1962.

Future For Fibers: He observed that the future of acrylic synthetic fibers like Orlon and dynel "have the potential to parallel the growth in rayon consumption, which rose from only 9 million lbs. in 1920 to 1,350 million lbs. in 1950." Ammonia synthesis, using natural gas as the source of supply for the hydrogen component, now is 1.8 million tons a year and government goals for 1954-'55 are for from 3 to 5 million tons yearly.

In estimating present and future investments in petrochemicals, he foresaw no change in the rankings of the major companies except that National Petrochemicals might nose up from seventh to sixth place.

Estimates by the Hutton analyst:

	Estimated Investment in Petrochemicals 12/31/51	% Estimated Petrochemical Investment in Gross Plant, 12/31/51	Estimated Expansion in Petrochemical Plants 1952
Union Carbide	\$400 million*	46%	\$50 million
Dow Chemical	150 million	39%	75 million
Du Pont	100 million**	9.5%	100 million
Shell Oil	70 million	5.5%	(not available)
Monsanto	50 million***	25%	55 million
Mathieson	29 million	21%	None
National Petrochemicals	17 million	8.5%	20 million
American Cyanamid	10 million****	4.2%	10 million

* Including petroleum-based plastics.

** Represents only investment in the company's Texas plants, which are not exclusively devoted to petrochemicals.

*** Including investment in Chemstrand.

**** Including investment in Jefferson Chemical Co.



It performs with human-like sensitivity

• Maintains vacuum setting even after shutting down system
• Operation is simple and fool proof

Write for Descriptive Bulletin CM-97

The EMIL GREINER Co.
30-36 N. MOORE STREET NEW YORK 13, N.Y.

**MAGNESIUM
SILICOFLUORIDE**

**ZINC
SILICOFLUORIDE**

**HENRY SUNDHEIMER
COMPANY**

103 Park Ave., New York 17
Telephone: MUrray Hill 5-4214

Fluorine Specialists for Over 40 Years



Let us put this Prater equipment in a "package" for you. Let us design your process system so that you can grind and fractionate in one continuous operation. This closed circuit plan involves the use of Prater Dual Screen Pulverizers . . . Twin Cone Fractionators . . . Heavy Duty Collectors . . . and Rotary Airlock Feeders. And for fast, uniform blending of dry materials we'll include Blue Streak Twin-Spiral Mixers. Send for complete details and free book . . . today.

PRATER PULVERIZER COMPANY
1514 So. 55th Court, Chicago 50, Ill. ●

PRATER Mills ● Mixers ● Magnets ● Pulverizers
Fractionators ● Dust Collectors ● Milling Equipment

AMERICAN POTASH & CHEMICAL CORPORATION

122 EAST 42nd STREET

NEW YORK 17, N. Y.

38 SO. DEARBORN STREET
CHICAGO 3, ILLINOIS

214 WALTON BUILDING
ATLANTA 3, GEORGIA

3030 WEST SIXTH STREET
LOS ANGELES 54, CALIF.

Canada Keeps Its Gas

After more than four years of effort, gas companies in the state of Washington "have become discouraged with the prospect of ever getting gas from Canada."

Two pipeline companies that wanted to bring natural gas from Canada lost their best prospect when the Seattle Gas Co. cancelled a contract with one and refused a "letter of intent" requested by the other.

N. Henry Gellert, president of Seattle Gas, says he now is depending on the Pacific Northwest Pipeline Corp. to bring gas from the "Four Corners" area of New Mexico, Arizona, Colorado and Utah. He has cancelled a contract with Northwest Natural Gas Co., which proposed bringing gas from the Pincher Creek field in southwestern Alberta, and declined to give a letter of intent to Westcoast Transmission Co., Ltd., which has exclusive rights to export gas from the Peace River area of northwestern Alberta.

Akron Lead-off Man

Intent on gaining a wage increase of at least a dime an hour, the United Rubber Workers (CIO) are stepping up their negotiations with the "Big Four" rubber companies this week, apparently in an effort to get the new contracts signed before the union's annual convention in September.

URW strategy seems to be: try to talk Goodyear into agreeing to that kind of a wage boost, then get the other companies to follow suit.

Why Goodyear? The reason Goodyear has been picked as lead-off man in this play is that wages are the only issue of consequence in the bargaining talks under way in Cleveland's Carter Hotel.

Numerous other points—particularly pensions, health and welfare funds—are being hashed over in discussions with the other big rubber concerns. In asking for increases in these benefits, the Rubber Workers are taking their cue from a recent WSB ruling that company contributions to health and welfare funds are "non-inflationary."

Negative Reply Expected: These requests are expected to elicit a loud and firm "no" from the rubber companies—especially since they've had to cut prices on truck tires.

So far, negotiations between the rubber companies and the union have been conducting feeling-out maneuvers, with no one getting mad at anyone. One observer predicts that the "slugging phase" may come anytime within the next two weeks.

Quality and Quantity too...

Since 1885 Stauffer Chemical Company has been producing quality chemicals in carload quantities. Down through the years Stauffer has mastered the technique of economical mass-production of basic materials . . . remember the name *Stauffer* for your future requirements of quality chemicals.



STAUFFER CHEMICAL CO.

420 Lexington Avenue, New York 17, N. Y.

221 N. LaSalle Street, Chicago 1, Ill.

326 So. Main Street, Akron 8, Ohio

824 Wilshire Blvd., Los Angeles 14, Calif.

636 California Street, San Francisco 8, Calif.

Apopka, Fla. • North Portland, Oregon
Houston, Tex. • Weslaco, Tex.



A litter of poodle pups. This pedigree breed has attained all its quality features down through the years by careful breeding and rearing.

STAUFFER PRODUCTS

BHC and Formulations

Borax

Boric Acid

Boron Trichloride

Carbon Bisulphide

Carbon Tetrachloride

Caustic Soda

Chlordane Insecticides

Chlorine

Citric Acid

Cream of Tartar

DDT and Formulations

Fire Extinguisher Fluid

Fungicide "406" Formulations

Lindane and Formulations

Organic Phosphate Insecticides

Parathion Insecticides

Potassium Nitrate

Rochelle Salt

Silicon Tetrachloride

Sodium Hydrosulphide

Sulphur (*Specially processed
for all uses*)

Sulphur—Insoluble (*for
rubber compounding*)

Sulphuric Acid

Sulphur Chlorides

Tartar Emetics

Tartaric Acid

Titanium Trichloride Solution

Titanium Tetrachloride

Toxaphene Insecticides

"Zol" Dry Cleaning Fluid

How important is **CARBON DISULFIDE** (Bisulfide) to your operation?

Baker, pioneers of the electro-thermic method, assures you CS₂ of highest purity and uniformity—at low cost.

SPECIFICATIONS FOR Baker CARBON DISULFIDE TECHNICAL

Carbon Disulfide (CS₂) Content Dry Basis.....99.9%
Boiling Range.....0.5° C.
Recorded Boiling Point.....46.3° C.
Residue after Evaporation.....0.0014%
Foreign Sulfides and
Dissolved Sulfur.....Passes ACSTest
Sulfite and Sulfate (as SO₂).....Passes ACSTest
Specific Gravity at 15°/15° C.....1.270-1.275

STANDARD SINGLE TRIP CONTAINERS

55 gallon, 10 gallon, 5 gallon drums and
Tank Cars (8,000 gallons)—approximately
85,000 pounds.

If you manufacture rayon, rubber products, rubber intermediates, matches, varnishes, insecticides—or any one of a wide variety of other products—Carbon Disulfide means a great deal to your particular process, especially if you can obtain constant uniformity and purity at low cost.

To assure you of all three of these essential qualities, Baker produces Carbon Disulfide by the unique electro-thermic method, a process invented by Taylor and improved and perfected by Baker.

This precision method... coupled with continuous rather than batch distillation... insures uniformity of the finished product. You will find Baker's Carbon Disulfide exceptionally free from other sulfide impurities! It assays 99.99%!

No matter what product you manufacture—if it requires a superior Carbon Disulfide of measured purity and uniformity at low cost—it will pay you to specify Baker.

Baker is one of the principal volume producers of Carbon Disulfide. Our production is continuous... our sales are made in Tank Car Lots or Carloads in Drums to many of the large users. If you require Carbon Disulfide for your process work, Baker solicits your business.

Address J. T. Baker Chemical Co., *Executive Offices*, Phillipsburg, N. J.



Baker Chemicals
REAGENT • FINE • INDUSTRIAL

Drug Patent Upheld

While an Israeli company decides whether to appeal a court order stopping the company from selling Chloromycetin in that young nation, Parke, Davis & Co. this week took over its new role of sole legal supplier of that drug in Israel.

If the Israeli company appeals, the High Court of Justice can change the sentence but can't change the "finding of fact" announced by Judge Zeev Zeltner in District Court: that although Chloromycetin is produced in nature (in minute quantities by the micro-organism streptomycetes *Venezuela*), the process of producing the drug in useful quantities is patentable under Israeli law.

Payment Ordered: The District Court issued an injunction restraining the Israeli firm, called Abic, from selling Chloromycetin, and ordered that Abic pay Parke, Davis for all past sales of the drug in Israel. This amount is expected to come to some tens of thousands of dollars.

Abic has been buying the drug under the name "Synthomicin" from the Italian drug company, Lepetit of Milan. Parke, Davis reportedly brought suit in Israel rather than in Italy because Italian law does not offer patent protection on pharmaceuticals.

To U.S. drug manufacturers, the court decision signaled that U.S. patents will be as valid and binding in Israel as they are in Chicago. Prompt to take advantage of this pleasant situation, Parke, Davis has placed a six-month supply of Chloromycetin in Israel, thus assuring that the ban on Abic sales won't cause a shortage of the drug.

KEY CHANGES . .

Richard E. Keresey: To vice-president and general attorney, E. R. Squibb & Sons, New York, N.Y.

Eugene N. Beesley: To executive vice-president, Eli Lilly & Co., Indianapolis, Ind.

P. M. Buhner and C. O. Kleinsmith: To executive vice-presidents National Carbon Co., a division of Union Carbide and Carbon Corp., New York, N.Y.

E. C. Medcalf: To head of the Coal Tar Chemicals Department, American Cyanamid Co., Bound Brook, N.J.

Carl E. Allen: To member of board of directors, Dow Chemical Co., Midland, Mich.

Another tough filtering job licked by SPARKLER FILTERS

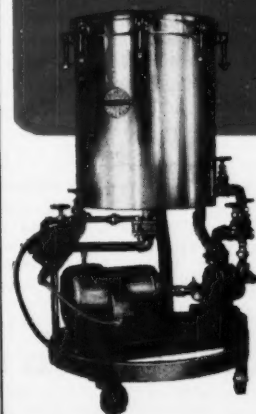


In the plants of a leading pharmaceutical manufacturer[®], one process had become a persistent problem — the removal of zinc dust from acetic acid solutions of hormone intermediates.

The size of these zinc particles is so microscopic that positive entrapment was almost impossible with the plate and frame filter equipment used by this company. Resulting filtrate did not measure up to the standards of purity necessary in drug production.

To handle this job, we recommended and installed a Sparkler Model 18-D-12 Filter. Although it requires far less floor area than did the plate and frame unit, the Sparkler filter not only achieved the desired quality of filtrate, but it performed the entire filtration procedure in much less time. Cost of the operation was reduced sharply because of this, and because fewer man-hours were necessary to clean the filter at the end of every cycle. Furthermore, the patented Sparkler Scavenger Plate which is made possible by our horizontal plate design, assures complete recovery of the valuable product during each cycle.

If your filtration problem is unusual in any way, we will be glad to give you full engineering assistance. Sparkler filters are available in a complete range of types, sizes, and materials to fit every need. Write Mr. Eric Anderson for details.



SPARKLER MANUFACTURING CO.

Hamden, CT.

Sparkler International Corp.

Hamden, CT., U.S.A.

Sparkler (Canada) Ltd.

Scarboro, Ont., Canada



*Manufacturers of fine
filtration equipment
for more than a
quarter of a century.*



caustic potash

manufacturing
refining
mining

CAUSTIC POTASH
all standard grades

CARBONATE OF POTASH
all standard grades

POTASSIUM CHLORIDE
refined and technical grades

SULFATE OF POTASH

LIQUID CHLORINE

FERRIC CHLORIDE

consistently low in iron, copper, nickel.. purity you can depend on for quality soap

With caustic potash that's virtually free of impurities, you can produce soap of the quality that wins and keeps consumer loyalty. You can depend on *International* for caustic potash in the purity you want. You can always be sure of shipments to your exact specifications, in the quantities you need, and with deliveries when you request them. Whatever grade of caustic potash you need, whether for soap or any other product, you'll find *International* a dependable source of supply because of its large and efficient facilities for mining, refining and manufacturing of potash and potash chemicals.

—FOR SOAP MAKING—

Special low iron grade—45 to 50%.
Available in 675 lb. drums and tank cars.

—FOR GENERAL CHEMICAL USE—

Solid—90%. Available in 700 lb. drums.
Flake—90%. Available in 100, 225 and 400 lb. drums.
Granular—90%. Available in 100, 225 and 500 lb. drums.
Broken—90%. Available in 100 and 450 lb. drums.
Liquid, low iron, a sparkling clear water-white solution of 45%. Available in tank cars and 675 lb. drums.
American Selected Walnut. Available in 100 and 225 lb. drums.

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Address all inquiries to Industrial Sales Dept., Potash Division
General Offices: 20 North Wacker Drive, Chicago 6
61 Broadway, New York 6

PRODUCTION . .

Stacked for Savings

Stacking chlorine cells four high cuts space requirements by 75%, halves capital investment for a plant, according to Inventor Al White.

It also means more efficient use of power, a smaller inventory of mercury, he claims.

White expects to prove his figures—based on lab results and theoretical calculations—in pilot units this fall.

When you're in the market for new chlorine capacity, normally you don't expect to get design ideas from a storm-window tycoon. Yet Chicago's Al White, who answers to that description, has a new twist in mercury cell design that is currently causing a lot of comment among electrolytic chlorine-caustic producers.

White says his cell reduces by 75% the normal area requirements for an installation. Further, he claims that a hundred-ton-a-day plant using his cells can be built for about \$5 million, about half the accepted cost for a plant that size.



INVENTOR WHITE: Will "four-high" stand up?

So far, these estimates are based on lab results and theoretical yields, have been skeptically received by most experts. But he is getting ready to build two pilot units in the fall and will make his operating data available to industry. White himself has no doubt of their accuracy. Says he: "I'm in this to make money, and if my figures are very far off, I'll only make a fool of myself when someone is ready to do business."

Chlorine men point out that it wouldn't be hard for a man without

experience in operating a plant to go wrong. They fear that stacking, which certainly has been considered before, may make servicing the cells difficult. Also they have to be convinced that new design features in the latest mercury cell plants, responsible for reducing space requirements as much as 50% over older installations, are not a better answer.

Stack 'em Up: White makes no boasts about improving the basic chemical engineering involved in the process. He does feel that a background in mechanical engineering has furnished him with some ideas for strictly mechanical refinements that his chemical counterparts have long overlooked.

Basically, his idea is to conserve the headroom normally wasted in an installation of cells by stacking them four high. Thus while keeping the overall height less than 7 ft., he is able to get a four-fold increase in output per unit area.

As he sees it, that should mean important savings in power consumption. For three out of four cells will be connected by leads of less than 1 ft. instead of the usual 15 ft. He figures shorter leads mean less voltage loss, more efficient use of power. And he's quick to point out that any savings in power mean a corresponding reduction in investment for expensive rectification equipment.

Another point: since one decomposer will serve four cells, mercury requirements for the system will be halved, 1,600-1,800 lbs. of mercury for a ton of daily chlorine output should be all that is needed. Besides the big saving in capital investment, that could mean fewer pumps and motors to maintain.

Easy to Work: Operation of the cells should be quite simple, says White. Briefly, here's how it's expected to work: Preheated by exhaust gases, incoming brine will be sent through feed controllers and fed automatically into the cells. No current flows through the brine until it enters the cells where it is decomposed into

NOW 7 FORMS OF LITHIUM METAL Available Commercially

- Cup—1/5 lb.
- Rod—(extruded)—1/2" & 3/4" dia.
- Wire—1/8" dia.
- Shot—4-8 mesh
- Ingot—1, 1 1/2, & 2 lb.
- Ribbon—3/4"
- Cartridge (encased in copper tubing)—2.25, 4.50, 9.0 & 108.0 grams per cartridge

Plus...

- Lithium Hydride—Fine Ground
- Lithium Nitride—Lump
- Lithium Amide—Crystalline

A recent expansion program has enabled Metalloy to substantially increase the production of Lithium Metal. Only Metalloy makes Lithium Metal available in so many forms (seven) to neatly fit practically any production process.

We are currently producing Lithium Nitride only in experimental quantities on demand. We are prepared, however, to explore its commercial possibilities for those who think it might fit their operations.

14 LITHIUM SALTS

(Currently in short supply but being expanded):
 Aluminate—Borate—Bromide—Carbonate—Chloride—Cobaltite—Fluoride—Hydroxide—Manganite—Nitrate—Silicate—Titanate—Zirconate—Zirconium Silicate.

If It's Lithium—It's Metalloy! Write Dept. A for Data Sheets



If It's Lithium—It's Metalloy
METALLOY CORP., Division
 Road Tower
 Mansfield, N. H.

DIPHENYLTHIOCARBAZONE (DITHIZONE)

Reagent for Co, Cu, Pb and Hg.

PHENOLSULFONPHTHALEIN (PHENOL RED)

For estimation of Renal Function, Also as indicator

THYMOLPHTHALEIN

As pH indicator and test for blood

BENZIDINE DIHYDROCHLORIDE

Reagent for test for blood

PROPYL GALLATE

An anti-oxidant for edible animal fats

Our research department has solved the synthesis of such complicated organic chemicals as PHENYLEPHRINE HYDROCHLORIDE U.S.P., TETRACAINE U.S.P. & METHONIUM HYDROBROMIDE pharmaceutical grade. We will be glad to supply these materials, as well as to develop synthesis and manufacture your specific products.

WRITE FOR PRICES AND TECHNICAL DATA SHEETS.
 DEPT. C. W.

FINE ORGANICS Inc.

211 East 19th Street, New York 3, N.Y.



ALL RUBBER DRUM



SAFE AND EASY TO HANDLE!

NO METAL

NO BREAKAGE

for

- MURIATIC ACID
- HYDROFLUORIC ACID
- FERRIC CHLORIDE
- CORROSIVE LIQUIDS



ICC-43A SPEC.
Tare Weight—34 lbs.
13 gallon capacity



Made with
Natural, Neoprene,
Butyl or other Synthetic
Rubber Linings



Threaded or Stopper type closures



**THE GENERAL TIRE
& RUBBER COMPANY**

MECHANICAL GOODS DIVISION
WABASH, INDIANA

Distributed by **THE C. P. HALL CO.**

5147 W. 67th St. • CHICAGO 38, ILL.

AKRON, O. • CHICAGO, ILL.

NEWARK, N. J. • LOS ANGELES, CAL.

PRODUCTION

sodium and chlorine. Chlorine is withdrawn and the sodium alloys with the mercury to form an amalgam.

The amalgam is drawn off through one manifold and the depleted brine through another to be replenished. The amalgam is sent through a series of scrubbing steps where the sodium reacts with water to form caustic soda and hydrogen and the mercury are recovered.

Several design features should add to the economies of the operation, in White's opinion:

- Replacement of a cell can be accomplished in an hour without the use of a crane. Meanwhile, a jumper switch will feed current to the other cells in the unit. And a circuit breaker in the feed-controller will interrupt the current in the brine and mercury streams, thereby preventing loss of energy and allowing the rest of the system to be grounded.

- Each unit of cells will be completely enclosed by an insulating housing. That, says White, should permit outdoor operation in many sections of the country.

Waiting for Action: The inventor is currently awaiting action by the Patent Office on his applications filed some time ago. Meanwhile, though experts may be skeptical of his estimates, there is strong evidence that several large firms are working along the same lines of development. And even if he's only half right, industry may well beat a path to his door.

"More" Manganese

Synthetic manganese ore is the aim of a cooperative research program which has been undertaken jointly by the U.S. Bureau of Mines and the American Iron and Steel Institute. The study is being undertaken to develop a commercial process for obtaining manganese from open-hearth steel slag.

The process is being investigated by the Bureau's Pittsburgh laboratories and utilizes a blast furnace and a basic converter in the operating cycle. It is based on similar work done by German metallurgists during World War II.

Like the United States, Germany lacked adequate reserves of high-grade manganese ores and was unable to import enough for military needs during the war. Consequently, intensive research was undertaken in an effort to produce a substitute from domestic manganiferous iron ores.

Basically, the German process consisted in producing high-manganese pig iron from the manganiferous iron ore and blowing it in a basic con-

verter to make high-manganese slag. This slag or synthetic ore was then treated further in a blast furnace to obtain ferromanganese for direct use in open-hearth steel production.

Centralized Safety

General Electric is now installing centralized safety stations in its chemical plant at Schenectady. All major safety devices for each section are now being grouped in one large, convenient and extra-visible space. This replaces the older plan where such equipment was spotted in many different and, according to GE, hard-to-remember locations.

The stations with their bright safety-green backgrounds and red and white equipment boxes, all colorfully labeled, will be visible from a distance. Each will contain a wash for caustic, sterile gauze application pads, an All-Service Gas Mask, stretcher, fire blanket, asbestos suit, two Chemox units—self-generating oxygen apparatus, and a fire extinguisher.

The first station has already been completed with six to eight more in the various stages of construction. A similar layout is planned for GE's Coshocton (Ohio) plant and others of the company's Chemical Division as soon as safety engineers can work out the necessary details.

EQUIPMENT

Centrifugal Compressor: Sawyer-Bailey Corp. (Buffalo) has developed a new centrifugal compressor for handling gases in high pressure systems. It is designed to operate at 600 psi and above and at flows as low as 125 cfm. The unit will handle gases contaminated with abrasive solids.

New Instrument Firm: Data Engineering, Inc. (Chicago) has just been formed for designing and manufacturing data recording instruments.

Cold Galvanizing: "Galvanite" a cold galvanizing compound, has been developed by the Galvanite Corp. (New York) as a protective coating for steel and iron. The compound is applied by brush, spray gun or cold dip.

Permyron Process: Exclusive licensing rights to the Permyron corrosion treatment process has been acquired by Stanwood Oil Corporation (New York). The new process consists of treating mild steel and other ferrous metals thermo-chemically to impart corrosion resistance.

The cost per square foot is claimed to be substantially the same as that of present methods.

KOPPERS

Synthetic

CHEMICALS

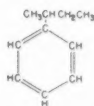
HERE ARE BRIEF DESCRIPTIONS OF 24 synthetic chemicals now being produced in commercial quantities by the Chemical Division of Koppers Company, Inc. Besides their present commercial applications, these chemicals offer numerous undeveloped possibilities of interest to research and development chemists.

Koppers will send you, without obligation, detailed information on products that offer possibilities for your use. Experimental samples of most of the chemicals described herein also are available on request.

Numerous other coal-tar derivatives, developed by Koppers research, are available in limited quantities from pilot-plant operations. Inquiries concerning these products are welcomed.

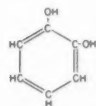


*For
your file*



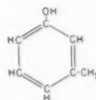
sec-BUTYLBENZENE

Koppers sec-Butylbenzene is a clear, liquid, alkylated aromatic hydrocarbon having a boiling point of 173.4°C (344°F) and the thermal stability and solvent power of analogous aromatic hydrocarbons. It undergoes reactions such as nitration, oxidation, halogenation, hydrogenation, sulfonation, and dehydrogenation. This compound offers possibilities for the synthesis of dyestuffs and fine chemicals, and as a raw material for the production of surface-active agents. Bulletin No. C-7-104 describes this product in detail.



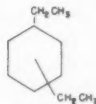
CATECHOL

Koppers Catechol (ortho-dihydroxybenzene) is a water-soluble, crystalline, dihydric phenol. Its chemical reactions include those typical of phenols, such as alkylation, halogenation, oxidation, and etherification. It is used in fur dyeing, in the preparation of dyestuffs and medicinals, in photography, as an oxygen-removal agent, in specialty inks, and in the production of antioxidants for rubber and lubricating oils. Bulletin No. C-9-127 gives complete information on this compound.



meta-CRESOL

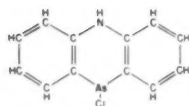
Koppers meta-Cresol is an oily liquid possessing a typical phenolic odor. This compound is available with a purity of 95-98%. Important chemical reactions include nitration, esterification, sulfonation, hydrogenation, halogenation, alkylation, and condensation with aldehydes. This grade of meta-Cresol is used for the preparation of fungicides, thymol, musk ambrette, and other fine chemicals.



DIETHYLBENZENE

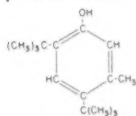
Koppers Diethylbenzene is a clear, almost water-white liquid available as a mixture of the three isomers. Its chemical reactivity is similar to that of ethylbenzene, as it undergoes hydrogenation, nitration, halogenation, oxidation, dehydrogenation, and sulfonation. This material is used for the production of divinylbenzene, as an organic intermediate, and as a high-boiling aromatic solvent.

KOPPERS COMPANY, INC. *Chemical Division* **PITTSBURGH 19, PA.**



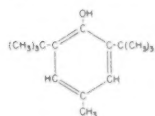
DIPHENYLAMINECHLORARSINE

Koppers Diphenylaminechlorarsine, or "DM," is a crystalline organo-arsenic compound. This material is a sternutator and a skin irritant. As an organic arsenical, it is toxic to many of the lower forms of animal life. In addition to its use as a component of tear-gas devices, "DM" is useful in the formulation of wood-treating solutions for protection against attack by pests such as marine borers of the genus *Teredo*.



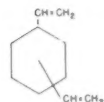
Di-tert-BUTYL-meta-CRESOL

Koppers 4, 6-Di-tertiary-butyl-meta-cresol is a tan-colored, solid, alkylated phenol. In this tri-substituted phenol, only one of the three normally reactive nuclear positions is available for further chemical reaction. This compound is useful as an intermediate for the production of rubber chemicals, modified phenolic resins, and synthetic musks of the ambrette type. It is also suggested for use as a tackifier and softener for GR-A type synthetic rubbers. Bulletin No. C-8-114 gives further data on this product.



Di-tert-BUTYL-para-CRESOL

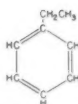
Koppers Di-tert-butyl-para-cresol is a white- to tan-colored, solid, alkylated phenol. This tri-substituted hindered phenol has each of the three normally reactive nuclear positions blocked with alkyl groups. It is insoluble in alkalies, and does not undergo many of the reactions typical of phenols. The material is an antioxidant for hydrocarbon materials, and is useful as a lubricating-oil additive, as a stabilizer of gasoline for the prevention of gum formation, as a non-staining rubber antioxidant, as a stabilizer for insecticidal preparations, and as an antioxidant for non-edible industrial fats, greases, and electrical insulating oils. It is useful in deterring the sludge formation in transformer oils. Bulletin No. C-0-115 gives further data on the general uses of this compound. Bulletin C-9-115-1 gives directions for the preparation of Di-tert-butyl-para-cresol dispersions for use in rubber latices. Bulletin C-9-115-2 gives comparative data on the performance of this compound as a non-staining rubber antioxidant.



DIVINYLBENZENE
20-25% and 40-50%

Koppers Divinylbenzene is a light yellow- to tan-colored mobile liquid possessing a sharp odor. This material is supplied in two grades: Divinylbenzene 20-25% contains 20-25% of divinylbenzene, in admixture with styrene monomer, ethylvinylbenzene, and diethylbenzene; Divinylbenzene 40-50% contains 40-50% of divinylbenzene, in admixture with ethylvinylbenzene and a small amount of non-reactive material. This highly reactive bifunctional monomer is of interest as a chemical intermediate and as a cross-linking agent for various polymers. It is useful for the production of copolymers such as the "superprocessing" GR-S synthetic rubbers, synthetic ion-exchange resins, potting and laminating resins, modified drying oils and alkyl resins, and specialty copolymers. Bulletin No. C-9-102 describes the uses and the chemical reactions of this material.

KOPPERS

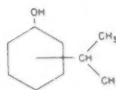


ETHYLBENZENE

Koppers Ethylbenzene is a clear, water-white, liquid aromatic hydrocarbon of high purity. The boiling point of this compound (136°C, 277°F) is in the xylene range, and its solvent properties are similar to those of xylene. Its chemical reactions include alkylation, nitration, sulfonation, halogenation, hydrogenation, acylation, dehydrogenation, and oxidation. It is used for the production of styrene monomer and the chlorostyrenes, as a solvent, and as an organic chemical intermediate.

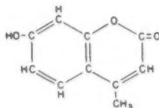
IMPRUVOL 20

Koppers Impruvol 20 is an oxidation inhibitor for transformer and circuit breaker oils. The active ingredient is Di-tert-Butyl-para-Cresol (DBPC) at a concentration of 20.0% by weight dissolved in a high quality, conventional uninhibited transformer oil. The addition of 1.5 per cent by volume of Impruvol 20 is equivalent to the addition of about 0.3 per cent by weight of the solid DBPC. Further details are given in Bulletin No. C-0-140.



ISOPROPYL PHENOL

Koppers Isopropyl Phenol is a clear, liquid, alkylated phenol which freezes slightly below room temperature. It is a mixture of ortho, meta, and para isopropyl phenols, together with a small amount of diisopropyl phenols. It possesses a characteristic phenolic odor and undergoes the reaction typical of mono-alkylated phenols. Isopropyl Phenol is useful for the formulation of internal combustion engine-cleaning compounds and crank case flushing compounds, as a solvent in wire-coating enamels, and as an intermediate for the preparation of phenolic resins for use as molding, laminating and oil-soluble varnish resins, for lubricating oil additives, plasticizers, rubber chemicals, germicides, fungicides, insecticides and weed killers.

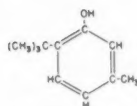


beta-METHYL UMBELLIFERONE

Koppers beta-Methyl Umbelliferone is a crystalline powder, soluble in ethanol and in aqueous solutions of the alkali hydroxides, and slightly soluble in water. It undergoes most of the reactions typical of the coumarins. The blue fluorescence exhibited by this compound is used to mask the yellow tint of soaps and related products. The compound also finds use as an intermediate in organic syntheses, and as a screening agent in sun-tan lotions. Bulletin No. C-9-111 describes this compound in detail.

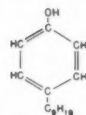
Synthetic

CHEMICALS



MONO-tert-BUTYL-meta-CRESOL

Koppers Mono-6-tertiary-butyl-meta-cresol is a clear, liquid, alkylated phenol which freezes at a temperature slightly below room temperature. In this disubstituted phenol, two of the three normally reactive nuclear positions are unsubstituted and are subject to reactions such as acylation, sulfuration, nitration, alkylation, and condensation with aldehydes. This compound is a powerful germicide for the formulation of disinfectants. It is used in the production of perfume fixatives such as musk ambrette, for rubber and petroleum chemicals, modified phenolic resins, and fine chemicals. The compound is described in detail in Bulletin C-9-130. Bulletin C-9-130-1 describes the preparation of some typical Mono-tert-butyl-meta-cresol disinfectants.



NONYL PHENOL

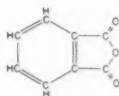
Koppers Nonyl Phenol is a clear yellow liquid possessing a slight phenolic odor. This compound undergoes the reactions typical of mono-alkylated phenols. Nonyl Phenol is useful for the production of synthetic detergents and other surface-active agents, for the preparation of lubricating-oil additives, and oil soluble resins. It is also of interest as an intermediate for the production of plasticizers, agricultural chemicals, antioxidants, pharmaceuticals, and corrosion inhibitors. Detailed discussion of the compound is given in Bulletin No. C-9-125.

PENACOLITE® ADHESIVES

Penacolite Adhesives are resorcinol-aldehyde and phenol resorcinol-aldehyde resin products developed for the bonding of wood and other cellulosic materials, laminated phenolics, plastics, and rubber goods, etc. These resin adhesives are unusual because they cure at room temperature (75°F) with the use of neutral catalysts, and form good bonds. The neutral, cured bond is infusible, waterproof, boilproof, and weatherproof. These adhesives are available in a number of formulations and grades to meet various requirements. Special bulletins are available describing their uses and methods of application. They are C-0-143—Penacolite Adhesive G 1215; C-0-145—Penacolite Adhesive G 1131; C-0-148 and C-2-154—Penacolite Adhesive G 1124; and C-1-152T and C-2-155—Penacolite Adhesive G 1260.

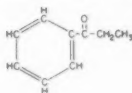
RESORSABOND ADHESIVES

Resorsabond Adhesives are resorcinol-aldehyde and modified resorcinol-aldehyde resin products developed for the bonding of wood, cellulosic containing laminate, and special fire door core. These adhesives cure at room temperature (75°F). The bonds are resistant to weather and are infusible, boilproof, and waterproof. The Resorsabond Adhesives are available in two formulations to meet various requirements. How to use Resorsabond R11 is described in Bulletin No. C-0-146, while Bulletin No. C-0-147 covers Resorsabond R12.



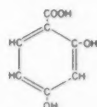
PHTHALIC ANHYDRIDE

Koppers Phthalic Anhydride is a flaked, white solid with a minimum freezing point of 130.7°C. This highly-refined compound possesses excellent color stability and is free of color-producing impurities. Phthalic Anhydride is used in large quantities for the production of alkyd resins, ester-type plasticizers, dye intermediates, insect repellents, pharmaceuticals, and miscellaneous organic chemicals such as tetrachlorophthalic anhydride, phthalide, and phthalonitrile. Ask for Bulletin No. C-0-144.



PROPIOPHENONE

Koppers Propiophenone (phenyl ethyl ketone) is a clear liquid possessing a strong, pleasant odor. Its chemical reactions are typical of an aromatic ketone and are similar to those of acetophenone. This material finds application in the production of pharmaceuticals and dyestuffs, and as a perfume fixative. The product is discussed in detail in Bulletin No. C-9-133.



BETA-RESORCYLIC ACID

Koppers beta-Resorcylic Acid (2,4-dihydroxybenzoic acid) is a white, crystalline, high-melting solid which is slightly soluble in water. This compound, combining many of the chemical properties of resorcinol and benzoic acid, is used in the production of specialty dyestuffs and as an intermediate for the preparation of fine chemicals. Write for Bulletin No. C-9-131.



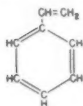
RESORCINOL

Koppers Resorcinol (meta-dihydroxybenzene) is a water-soluble, crystalline, dihydric phenol. This highly reactive compound undergoes most of the typical reactions of phenols including nitration, alkylation, condensation with aldehydes, etherification, and oxidation. It is widely used for the preparation of low-pressure, room-temperature setting resorcinol-formaldehyde resin-adhesives. The compound is also used to modify phenol-formaldehyde, urea-formaldehyde, casein-formaldehyde, and analogous resins. It finds application as a chemical intermediate for dyestuffs, medicinals, textile and leather chemicals, explosives, and compositions giving increased adhesion of rubber to fabric. The chemistry and uses of Resorcinol are covered in Bulletin No. C-2-124.



SODIUM SULFITE

Koppers technical Sodium Sulfite is available as a free-flowing, light-brown anhydrous, water-soluble salt. In aqueous solutions it acts as a reducing agent and yields sulfur dioxide when acidified. It is used as an oxygen-removal agent in treating boiler-feed water, as an antichlor in textile manufacture, as a bleaching agent, in the semi-chemical pulping of wood, and as a chemical intermediate. This grade is not suitable for photographic purposes.



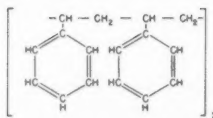
STYRENE MONOMER

Koppers Styrene Monomer is a clear, colorless, liquid, aromatic hydrocarbon available in tank-car quantities with a purity of at least 99.3%. This reactive compound polymerizes with itself to form polystyrene molding products, and with other active olefinic compounds to produce synthetic rubbers, polyester laminating and casting resins, ion-exchange resins, and specialty synthetic elastomers. Its copolymers with drying oils and with alkyl resins are finding increasing use in protective coatings. Styrene Monomer is also a versatile chemical raw material, yielding organic intermediates useful for further chemical synthesis. Bulletin C-1-119 gives the properties of Koppers Styrene Monomer. Bulletin C-9-119-1 describes storage conditions for Styrene Monomer.



SULFURIC ACID

Koppers technical Sulfuric Acid is a light-colored, heavy, viscous, corrosive liquid. It is both a strong acid and a powerful dehydrating agent. Its uses include fertilizer manufacture, petroleum refining, metal cleaning, and chemical production.



POLYSTYRENE

Koppers Polystyrene is an outstanding thermoplastic molding material which merits the consideration of all molders of thermoplastic products. Polystyrene is the lightest of the modern rigid plastics, and is the least expensive of the thermoplastics. It is outstanding for its ease of molding and for its adaptability to various fabricating techniques. Koppers Polystyrene, produced by Koppers from its own Styrene Monomer, is held within rigid product specifications. It is available as a crystal-clear, colorless plastic, in black and white, and in a wide range of transparent, translucent, and opaque colors. The high quality of this material, its excellent heat resistance and dimensional stability, and its low specific gravity favor the large-scale use of this thermoplastic.

Bulletin C-0-137 describes Koppers Polystyrenes in detail.

CHART OF PLASTICS PROPERTIES: Bulletin C-1-105 "The Properties of 17 Popular Modern Rigid Plastics" lists the physical, chemical, and electrical properties of the commonly-used plastics materials.

POLYSTYRENE SERVICE BULLETINS: Bulletin C-9-112 "Suggestions for Solution of Molding Problems." Bulletin C-1-121 "Koppers Adhesive for Polystyrene." Bulletin C-1-129 "Prevention of Dust Collection on Polystyrene by Anti-Static Compound Application."

KOPPERS COMPANY, INC.

Chemical Division

Main Office: Koppers Building, Pittsburgh 19, Pa.



EASTERN DISTRICT SALES OFFICE

350 Fifth Avenue
New York 1, New York
Longacre 4-1130

Philadelphia Sales Office

887 Broad Street Station Building
Philadelphia 3, Pennsylvania
Locust 4-1110

NEW ENGLAND DISTRICT SALES OFFICE

250 Stuart Street
Boston 16, Massachusetts
Hancock 6-1700

MIDWESTERN DISTRICT SALES OFFICE

2040 Peoples Gas Building
122 S. Michigan Avenue
Chicago 3, Illinois • Webster 9-2400

PITTSBURGH DISTRICT SALES OFFICE

Koppers Building
Pittsburgh 19, Penna.
Atlantic 1-6240, Ext. 689

Detroit Sales Office

United Artists Building
154 Bagley Avenue
Detroit 26, Michigan • Woodward 3-3396

WESTERN DISTRICT SALES OFFICE

727 East Gage Avenue
Los Angeles 1, California
Adams 3-6231

Portland Sales Office

1202 No. W. 17th Avenue
Portland 9, Oregon
Broadway 6659

Further information relative to the properties of the compounds, grades available, and current prices, may be obtained by writing to:

KOPPERS COMPANY, INC. • CHEMICAL DIVISION

PITTSBURGH 19, PA.



SRF'S HASS and KELLY: For shifting emphasis, low-pressure public relations.

Sweeter For Industry

New pilot of Sugar Research Foundation foresees a promising future for sugar as an industrial raw material.

Emphasis on industrial applications is now a strong force behind the Foundation's research activities.

Progress to date has been slow. But two recent developments have alerted the paint and pharmaceutical fields.

"Sugar" means dessert and candy to most, but to Sugar Research Foundation it's a dead-serious business. Organized in 1943, SRF is dedicated to the advancement and protection of its adopted charge through research and scientific investigation. The Foundation means business; its high-sounding objective isn't just another hollow and fashionable tribute to science. Proof of SRF's earnestness is underscored by its choice of leadership.

Last week, Henry B. Hass—for the past three years research director of General Aniline and Film Corp.—took over the research reins of SRF from Robert C. Hockett, prominent carbohydrate chemist and outgoing scientific director of the Foundation. In truth, Hass cannot accurately be termed Hockett's successor. In addition to his role as a scientist, the former GAF research director assumes the job of president of SRF and closely related Sugar Information Inc. And to round out his administrative duties, Hass becomes the new executive director of the allied Sugar Association.

A look at the sugar market is ample justification for wondering just why sugar needs a research boost. About

7 million tons of sugar were consumed in this country last year. The average American accounts for about 100 pounds a year, every year. The long-term stability of the market is remarkable. Sugar is the only carbohydrate that has held its own, market-wise, over the past 50 years. It's an industry the economists like to call "depression-proof."

But on the other side of the ledger, oversupply is a constant bane of the sugar industry. Yield per acre of cultivated land is startling. Indiscriminate cultivation of sugar-producing areas could easily reduce the commodity to a glut on the market. The simple fact is that almost any conceivable need for sugar could be filled with little strain. Finding new markets for this potential supply is a prime aim of current research.

Then, too, sugar producers have been rudely awakened to the need for safeguarding traditional demand for their product. Consequently, nutritional studies have taken the bulk of research effort expended to date. Debunking the once-popular misconception that sugar is the sole culprit of dental decay is an outstanding ex-

ample of this fence-mending drive. Incidentally, one interesting discovery made by SRF-sponsored researchers is that the sugar in a vegetable is, for all intents, equal in its caries-inducing power to the sugar of candy.

War Baby: Sugar Research Foundation, progenitor of Sugar Association and Sugar Information Inc., was conceived during the World War II years by an alarmed sugar-producing industry. The industry feared the long-term implications of government propaganda designed to discourage sugar consumption, promote compliance with rationing regulations. SRF was brought into being to counter this campaign by developing a sound, scientific defense of sugar's place on the dinner table.

Within a short time it became apparent that a number of SRF's activities didn't fit the function of a research organization. To spread the word of its work, the industry set up Sugar Information Inc., placed it in the hands of SRF secretary—silver-haired, bespectacled Neil Kelly. Kelly, still a mainstay of Sugar Information, candidly describes his work as "low-pressure public relations," emphasizes in no uncertain terms that it's completely non-political, has no lobbying interest. Sugar Assoc., the third SRF offshoot, serves as a central fund-gathering agency for SRF and SI.

All three are membership companies, are supported by 110 private sugar refiners and processors in the U.S., Hawaii, Canada, Cuba and Puerto Rico. U.S. and Canadian subscribers produce roughly 90% of all the sugar consumed in the two countries.

Clear Course: The Foundation's work is relatively clear-cut. Market distribution data practically predetermine its course of action. Food uses take about 97% of domestic sugar consumption. There isn't much chance of expanding demand as a foodstuff. The remaining 3%—the portion earmarked for the process industries—however, is ripe for development. As a result, research emphasis is shifting to chemical modification of the sucrose molecule to appealing industry configurations. And sucrose would have some very attractive features as a large-scale raw material: Raw sugar of 96% purity sells for a little more than 4¢ a pound in Cuba.

Today sugar cannot boast significant industrial inroads. As sucrose octanitate it's used in explosives manufacture. Foundry cores, welding rods, mirror manufacture are other outlets. Add up all the sugar that's used in

these applications and you don't come up with a very impressive figure. But, if SRF-sponsored research fulfills expectations, all that could well be changed. Here's a quick rundown on new developments:

- Polyallylsucrose is one of the newest, perhaps the brightest hope for the future. A drying agent, containing four or five allyl groups per sucrose molecule, it has a synergistic influence on drying oils. On the strength of work done at Eastern Regional Research Laboratories (of U.S. Department of Agriculture), the material appears to be compatible with commonly used drying oils, has sparked a good deal of interest among paint and lacquer chemists. And cost—it's made from sucrose and allyl chloride—while a bit high at present, should not be an insurmountable commercial barrier.

- Another research achievement that bodes well for sugar's industrial future is a novel technique of separating the dextrose and levulose components of invert sugar. It's done by electrolytically oxidizing the dextrose portion of the invert sugar mixture to calcium gluconate, an organic salt now produced commercially by Chas. Pfizer & Co. By ion-exchange methods, a highly pure levulose syrup may be obtained. Much of this work is covered by a recent patent (U.S. 2,567,060).

- Additional noteworthy progress has been made (though not under SRF auspices) on improving the use of sucrose in the manufacture of dextran, the blood plasma extender. And a further highly significant medical advance, fostered by SRF research, is the development of a superior physiological invert sugar solution for intravenous feeding.

This brief summary by no means includes all of SRF's recent research. But it is all the research the Foundation wants to talk about at this time.

What the future has in store for SRF is hard to divine. Hass foresees a greater swing to applied research, a stepped-up drive for new industrial markets. Yet he isn't unaware of a still-urgent need for more fundamental knowledge.

"Do you realize," Hass asks, "that we still don't know too much even about sugar's solubility? For instance, what will sugar dissolve in that doesn't contain OH or NH groups? Dioxane, sure. But what else? You'd have a hard time finding the answer." Whether the emphasis be on fundamental or applied research, Hass' job is the same: to see that the \$½ million annually contributed by the sugar-producing industry for SRF-sponsored research at colleges, universities and industrial laboratories gets to where it will do the most good.

Antibiotic On Trial

Chloromycetin, Parke, Davis & Co.'s broad-spectrum antibiotic is on the spot. An intensive, nationwide probe of reports that the drug seems to cause serious blood disturbances, is now in its last stages.

Gravity of the situation is pointed up by the fact that Food and Drug Administration has thrown its entire field force of inspectors and technicians into the investigation. The probe has also been labeled top-priority at FDA's Washington, D.C., headquarters.

The Chloromycetin problem dates back further than recent press reports indicate. FDA took notice several months ago when the incidence of known reactions among persons receiving the drug climbed over the 1-in-4,000 critical ratio established for antibiotics. Deputy FDA Commissioner George P. Larrick reveals that on April 21, representatives of Parke, Davis were invited to a conference at the federal agency.

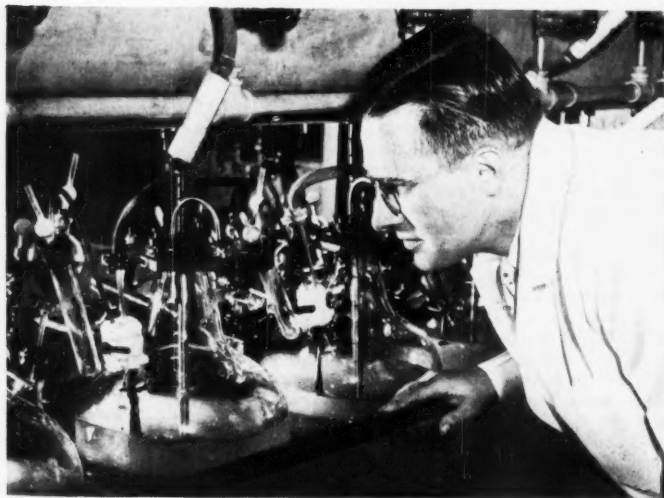
As a result of that meeting, the Detroit pharmaceutical firm started warnings to the medical profession about possible involvement of the antibiotic in the blood-forming process. A similar notice was also included in a brochure issued by Parke, Davis early in May. Among other things, the circular stressed the need for hematological tests as a precautionary measure for patients receiving the drug over extended periods of time.

Day and Night: Still, the distressing reports continued to mount. More than a month ago, FDA alerted its medical staff, started a spot survey of hospitals and clinics to get a better idea of the scope of the problem. By June 27, FDA's case-list had reached 94. Although several of these have not been confirmed, the familiar blood complaint is common to all. Since the end of June, FDA people—working day and night, over weekends—have uncovered 200 additional cases.

By last week Deputy Commissioner Larrick ventured, "There seems to be no doubt that blood disorders have resulted from the use of this drug. But," he pointed out, "several million people throughout the world have been treated with Chloromycetin apparently without adverse effect and doubtless thousands of lives have been saved through its use in serious diseases."

Always A Risk: It's no secret that many of the most valuable drugs in use today have side effects which the physician guards against. Their use always involves a calculated risk.

Before FDA takes any action, all evidence will be subjected to rigorous



Million for Mycology

BANK OF TEST FERMENTERS provides a glimpse of what goes on within Lederle Laboratories Div.'s (American Cyanamid Co.) new million-dollar mycology building at Pearl River, N.Y. Nestor Bohonos, chief of

Lederle's mycology research, checks reaction progress in one fermenter. His researchers isolate and grow cultures of microorganisms found in soil samples from all parts of the globe, screen them for antibiotic potential.

DAVISON PRODUCES SPECIAL OXIDATION CATALYST

**Yields Increased . . . Costs Lowered . . .
Complete Restriction of Information**

For a two year period a manufacturer had worked on the problem of developing an oxidation catalyst for their own use. Their basic research was presented to a Davison Field Service Engineer as a laboratory prescription. This material was completely and confidentially coordinated with Davison's Technical Service and Research Departments. Pilot plant samples were manufactured enabling further research to be accomplished on the manufacture of the catalyst. Top men in the catalyst field worked on the development of this oxidation catalyst and after six months it was manufactured for large scale commercial use.

Because of Davison's modern facilities and extensive experience, the oxidation catalyst was produced at greatly reduced cost yet provided top yields. At no time was restricted information in danger of being divulged.

This is an example of how Davison's specialty catalyst development and production works. If you have a catalyst problem, contact the Davison Field Service Engineer. You can rely on Davison to work with you, confidentially.

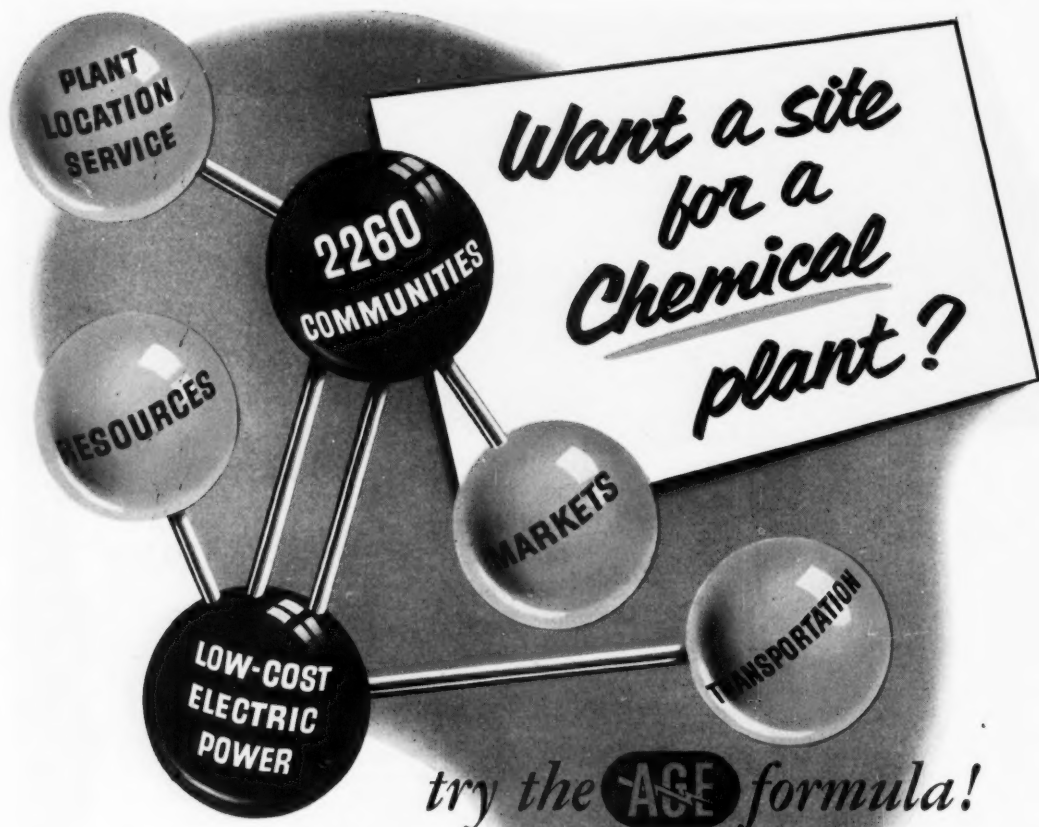
Progress Through Chemistry

THE DAVISON CHEMICAL CORPORATION

Baltimore 3, Maryland

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLOURIDES AND FERTILIZERS

July 19, 1952 • Chemical Week



try the **AGE** formula!

- **Resources** . . . Rich deposits of coal, salt, brines, and other basic chemical needs. Abundant ground and surface water.
- **Markets** . . . More than half the population of the U.S. is within 500 miles of the center of the AGE System.
- **Transportation** . . . Excellent service everywhere by land, water, air.
- **Low-cost Power** . . . Fifty generating plants—among them the newest and finest in the world—have a capacity (installed or under construction) of 4,019,000 kilowatts.

An area with exceptional resources that has already attracted some of the world's greatest chemical plants . . . not one locality but 2260 diversified communities from which to choose . . . an expertly staffed industrial development department with intimate knowledge of all 2260 . . . that's what AGE offers to chemical companies seeking room to grow. It's a formula that assures the kind of location you want in the least possible time.

For details on available sites, on taxes, labor supply, living conditions, etc., write, wire or phone today. The service is free and you can outline your requirements in full confidence.

FREE MAP: Power and Natural Resources

Full-color map shows rail and power lines and waterways . . . spots principal natural resources of the 7-state AGE area at a glance. Yours for the asking.



AGE American Gas and Electric Company

Manager: Area Development Division, 30 Church Street, New York 8

OPERATING AFFILIATES

Appalachian Electric Power Company
Central Ohio Light & Power Company
Indiana & Michigan Electric Company
Kentucky and West Virginia Power Co., Inc.

Kingsport Utilities, Inc.
The Ohio Power Company
Wheeling Electric Company

RESEARCH

appraisal by a battery of medical men. Two considerations, still to be elucidated, will weigh heavily in its deliberations: whether method of administration played a part in bringing on blood disorders; and possible physical characteristics (e.g. kidney trouble) common to all cases that may have predisposed them to untoward reaction.

One thing seems certain at this time: The drug won't be taken off the market entirely. But it's highly possible that an unfavorable verdict would have the effect of confining Chloromycetin to the treatment of typhoid and a few other diseases against which it has proved singularly effective. If this does come about, the impact on the medical profession's chemotherapeutic arsenal would be hard to define. Other broad-spectrum antibiotics (Pfizer's Terramycin, Lederle's Aureomycin) are ready and doubtless willing to help fill the breach.

Still Climbing: The boom in sponsored research is still very much in force, with business-volume figures of private research organizations climbing to a new record high. Semi-annual figures of Midwest Research Institute (Kansas City, Mo.) help prove this point. According to Institute president Charles N. Kimball, the number of research contracts signed by MRI clients during the past six months is nearly double that of the same period last year and a six-fold increase over contracts for the first six months of 1950. The Institute's current rate of research expenditure is about \$1¼ million a year.

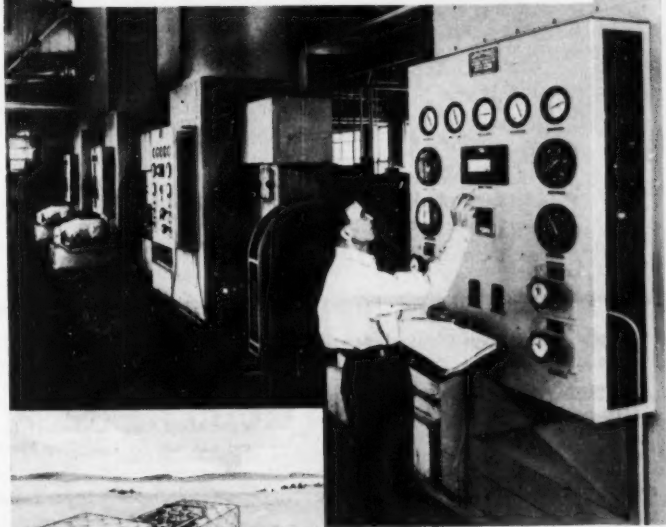
Enzyme Brew: A highly purified preparation of coenzyme A (Co-A) is the newest product of Pabst Laboratories (Milwaukee, Wis.). Of primary interest to biochemists, Co-A is a carrier of so-called active acetate groups in several metabolic enzyme systems. Pabst says its Co-A "has shown maximum response and freedom from inhibitory contaminants in a wide variety of enzymatic reactions."

Pigment News: Toluidine Red, Fastolux Blue, Permanent Yellow, Richmond and Fastolux Green are five of a new line of color dispersions for latex emulsion paints developed by Ansbacher-Siegle Corp. Peter E. Davis, general manager of the Staten Island (N.Y.) firm contends that the new dispersions will appreciably broaden the color range of latex emulsion paints.

Double Debut: Pilot-plant lots of

July 19, 1952 • Chemical Week

High Purity or Tonnage OXYGEN-NITROGEN Generators



▲ Typical Air Products High Purity Oxygen-Nitrogen Generator installation in customer's plant. Oxygen capacity 25,000,000 cubic feet per month. Produces Nitrogen simultaneously.

◆ Typical Air Products Tonnage Oxygen-Nitrogen Generator. Oxygen capacity 500 tons per day. Produces Nitrogen simultaneously.

Make your own oxygen and nitrogen from the free air

Air Products High Purity Generators make pure, dry oxygen, and/or nitrogen from air, compress it up to 170 atmospheres, feed it directly into your pipelines. Efficient, safe, simple, com-

plete. Operated by one man part-time. 14 models available with capacities from 300 cubic feet to 12,000 cubic feet per hour. Can also produce liquid oxygen and nitrogen.

Air Products Tonnage Generators produce huge quantities of very low cost oxygen and nitrogen in gaseous or liquid form. Capacities, purities and pressures

are virtually unlimited. Utilize the most advanced cycles, to suit individual requirements. Safe, simple — operated by one man per shift.

TO FIND OUT HOW you can use the free air to make your own oxygen and nitrogen, talk over your requirements with Air Products Engineers. They have designed, built and put into successful operation nearly 500 oxygen-nitrogen generators.

AIR PRODUCTS, INCORPORATED

Dept. J, Box 538,
Allentown, Pa.

Air Products
**OXYGEN-NITROGEN-ARGON
Generators**

Specialists in Equipment for All Low-Temperature Processes



Sodium Dispersions?

Sodium Dispersions are stable suspensions of microscopic sodium particles (5 – 15 microns) in inert hydrocarbon media with boiling points above the melting point of Sodium (97.5° C.). The commercial use of this tremendously reactive form of sodium was made possible by new techniques in sodium chemistry developed in our laboratories. The following questions are those most asked about Sodium Dispersions. The answers may enhance your own knowledge of the subject.

For descriptive literature, please address your inquiries to the National Distillers Chemical Co., Ashtabula, Ohio.



Sodium can be dispersed in both aliphatic and aromatic hydrocarbons.

TRUE ☐ FALSE ☐

True: Sodium can be dispersed readily in any organic compound inert to sodium and having a boiling point above the melting point of sodium. Typical media: toluene, kerosene, xylene, mineral spirits, diethyl ether of ethylene glycol.



Sodium Dispersions are supplied in tank cars.

TRUE ☐ FALSE ☐

False: Most Sodium Dispersions are formulated for specific applications. For this reason and since the dispersing medium generally will be re-used, it is desirable to produce the dispersion at the point of use. However, dispersions are easy to make in simple mixing equipment from laboratory to plant scale. National Distillers Chemical can supply complete knowhow on making Sodium Dispersions.



The use of these dispersions is limited to large scale operations.

TRUE ☐ FALSE ☐

False: Simple and inexpensive equipment is commercially available for the laboratory, pilot plant or plant scale preparation of sodium dispersions. In many cases existing equipment can be adapted for the preparation of dispersions.



Sodium Dispersions will give increased yields.

TRUE ☐ FALSE ☐

True: Sodium in dispersed form is far more reactive than massive sodium and makes possible shorter reaction times at lower temperatures for many processes, giving higher yields and fewer side products.



Sodium Dispersions are inexpensive to use.

TRUE ☐ FALSE ☐

True: For pilot plant and plant operations generally the cost of processing sodium into this form is only 1/2¢ to 3¢ per pound above the original cost of the sodium. Since dispersion preparation is easy for both large and small requirements, the cost is largely influenced by equipment capacity versus frequency of use. Process savings in labor, raw materials and other operating expenses generally more than offset this cost.



Sodium is available for use in new applications.

TRUE ☐ FALSE ☐

True: National Distillers Chemical Co. can assure you of a stable long-term supply of sodium. Sodium metal is available in steel barrels as 1, 2 1/2, 5 and 12 pound bricks and in tank cars holding 80,000 pounds net. Special 20 pound packages of 1 and 2 pound bricks are also available. The plant and sales offices are located at Ashtabula, Ohio.



National Distillers Chemical Co.
DIVISION OF NATIONAL DISTILLERS PRODUCTS CORPORATION

RESEARCH

o-ethylaniline and commercial quantities of *o*-ethyl nitrobenzene are newly available from Monsanto Chemical Co.'s organic chemicals division. Uses: intermediates in the manufacture of dyes, pharmaceuticals and rubber chemicals.

Clay Confab: Soil scientists and ceramic researchers should take notice of the upcoming (July 21 to 25) National Conference on Clays and Clay Technology to be held at University of Calif. (Berkeley). Avowed purpose of the Conference: to provide an opportunity for those engaged in some phase of fundamental studies of clays and clay technology to gather and share engineering experiences, scientific and technologic knowledge. Industry, government, and academic experts will participate.

Fluoro Wetter: Wetting Agent F-126 is the latest chemical offering of Minnesota Mining and Manufacturing Co. (St. Paul). It's a mixture of the ammonium salts of fully fluorinated carboxylic acids (mainly perfluorocaprylic), distinguished by very low surface tensions imparted to water solutions, rapid penetrating action and stability to extreme oxidizing conditions. Potential uses: in metal-cleaning and plating operations; textile and leather processing; foam preparation; and specialized cleaning and wetting applications. It's also suggested as an aid in the polymerization of fluorine-containing monomers.

Fair Exchange: Researchers of University of Oklahoma have developed a practical, low-cost, ion-exchange method of preparing flavonoid pigments. In the Oklahoma U. technique, Amberlite IRC-50(H) was successfully used for the isolation and purification of morin (2',3,4',5,7-pentahydroxyflavone) from aqueous extracts of the heartwood of *Chlorophora tinctoria*.

Thiamine Aid: A simple, reliable, stoichiometric procedure for determining thiamine (vitamin B₁) salts in non-aqueous media has been devised by Hoffman-La Roche (Nutley, N.J.) chemists. Key: titration with perchloric acid.

Get 'Em Young: One hundred litters of suckling pigs will be the subjects of a series of tests at Iowa State College to determine the effectiveness of sub-dermal pellet implantations of antibiotics. Aim of pellet implantation: to supply young pigs with feed-supplement antibiotics before they begin taking solid food.

A complete line
of quality
Petroleum Solvents

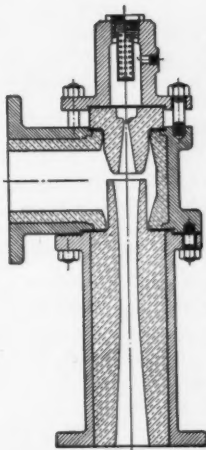
AMERICAN MINERAL SPIRITS COMPANY

230 N. Michigan Avenue, Chicago
155 E. 44th Street, New York
8600 S. Garfield Ave., South Gate, Los Angeles



C-R EVACTORS

MEET CORROSION PROBLEMS



The chemical industries are employing more and more Croll-Reynolds Evactors in vacuum processes where corrosion resistance is a major consideration. These steam jet vacuum units provide pressures ranging from a few inches to a few microns. Croll-Reynolds is a pioneer in the use of new construction materials and our engineers are investigating corrosion problems continually.

Stainless steels, Monel metal, Beryllium copper, Ni-Resist, PMG metal, hard lead, special bronzes, Hastalloy, and Illium are but a few of the special metals which find their way into our equipment. Carbon is used extensively as a lining material, and many plastics including Teflon and synthetic materials are used for making complete Evactors.

Consult our engineers for high vacuum equipment carefully designed for your specific conditions, and constructed of materials selected for your particular conditions.



CROLL-REYNOLDS CO., INC.

Main Office: 751 Central Avenue, Westfield, New Jersey
New York Office: 17 John Street, New York 38, N. Y.
CHILL-FACTORS • STEAM JET EVACTORS • CONDENSING EQUIPMENT

How a network power system prevents shut downs in this process plant

In the new Lever Brothers' Los Angeles plant, which produces soaps, detergents and edible oils, many of the processes are continuous and power stoppages would be extremely costly. So Bechtel Corp., the engineers and constructors, and Westinghouse applied a very advanced type of power system, a "secondary network", that's just about emergency-proof. Here are a few of the nontechnical highlights.

Substations tied together in network

This system follows the best modern practice of having power substations spotted throughout the plant—each one serving its own area. In addition however, the substations are tied together with emergency cross connections. If there's trouble in any substation, its part of the plant is immediately and automatically served through the neighboring units without even a *momentary* interruption.

No stand-by diesel-generator needed

Power enters the plant through either of two main lines from the utility company. If one line should develop a "fault", the automatic throw-over equipment switches to the other line. This system has such high reliability that no stand-by diesel-generator is needed.

System expanded easily as plant grows

Another important feature of this system is the ease with which additional load expansion can be handled. An increase of 40% in capacity is possible without disturbing the present system.

Call Westinghouse early on your next project

If you want advantages like these, when you're planning on building a new plant, expanding, or modernizing, call your Westinghouse office. We also offer a *complete* line of electrical equipment specifically designed for chemical plants. Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania.

J-94904



YOU CAN BE SURE... IF IT'S

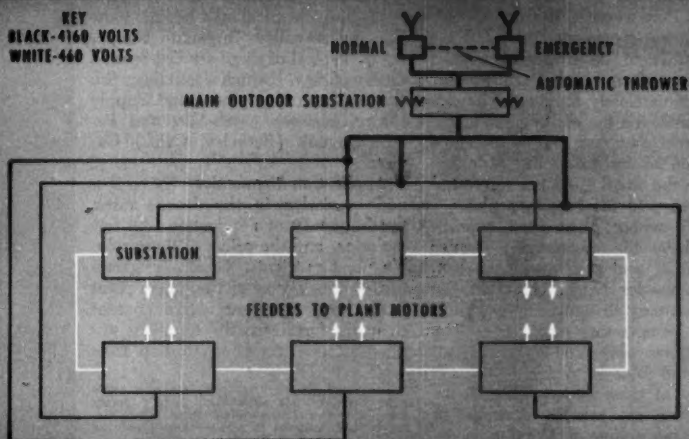
Westinghouse

**EQUIPMENT FOR
CHEMICAL PROCESSES**

**They did what you can do
to produce more**



KEY
BLACK-4160 VOLTS
WHITE-440 VOLTS



Lever Brothers new Los Angeles process plant has an advanced power system—the "secondary network". Triple feeders and substation cross connections give the system exceptional reliability and make future expansion easy.

SPECIALTIES



PLANT FOOD AND WATER: Fortified "soup" for the backyard garden.

Pouring It On

Soluble plant food concentrates, easy-to-handle fertilizer formulations designed for the home gardener, are getting plenty of attention this season.

A host of fertilizer makers is scrambling for the business; promotion almost equals that of soil conditioners.

Market is still a small part of total fertilizer sales, but producers are broadening outlets in the hunt for new customers.

Crowding soil conditioners for the gardener's attention this year are soluble plant food concentrates*. These easily-handled fertilizers are designed for the nearly 17 million home garden enthusiasts in this country, rather than the farmer, and make up a small-but-growing portion of the 20 million ton annual fertilizer chemical output.

Already available widely, even in dime stores, small packets of plant food concentrates are now appearing in grocery supermarkets. Naco Fertilizer Co. (subsidiary of W. R. Grace & Co.) is trying this outlet for its recently introduced Nurish.

And though most agricultural authorities predict the majority of farmers will be slow to change to the liquid type fertilizer, there is no ques-

tion the plant concentrates are a boon to the home gardener. Even Swift and Co., whose Vigoro has been a leading home fertilizer for years, will soon introduce a completely water-soluble Instant Vigoro tablet.

Spread or Spray: Ordinary bagged, dry fertilizers are soluble in water—no plant could get any value from them if they weren't. But dry spreading requires special equipment if the material is to be dispersed evenly, and can often result in "burned" plants if carelessly handled. The dry fertilizers, even the non-organic kinds, are often odorless, and the whole operation of fertilizing has little appeal to the small gardener interested in the care of his backyard plot.

That's where plant food concentrates have the advantage. They're convenient, and practically odorless. Sold as powder, liquids or tablets, the dosage is easy to figure; a sprinkling can is the necessary equipment. The concentrates work fast, and nearly all do a good job.

Many of these newer plant foods reflect the old standby formula of 5-10-5 (percentage of nitrogen, phos-

phorus, and potash available). But they are often more concentrated than the 5-10-5's. For example, Victor Chemical Co.'s Take Hold (also packaged by Vaughan Seed Co. as Fertil-Flow, and used principally as a transplanting aid) is a 10-51-17 formulation; Naco's Nurish has a balanced 20-20-20 make-up; Ra-Pid-Gro's product is 23-21-17. And the majority of them contain trace elements of copper, zinc, boron, manganese, and sometimes vitamins.

For the basic elements of fertilizer, there is not a great deal of difference between the chemicals used in the older dry types and those used in the soluble sorts. The calcium and sulfur in ordinary superphosphates about rule this phosphorous source out since they have low solubility. In their place ammonium phosphates are used.

Through Leaf and Root: For nitrogen, some of the newer fertilizers employ urea; this is absorbed through the foliage as well as the roots, and offers the amateur gardener quick and visible proof of the effectiveness of his fertilizer. Nu-Green, a Du Pont product for apple tree spraying, is principally urea, but it isn't sold to the home horticulturist.

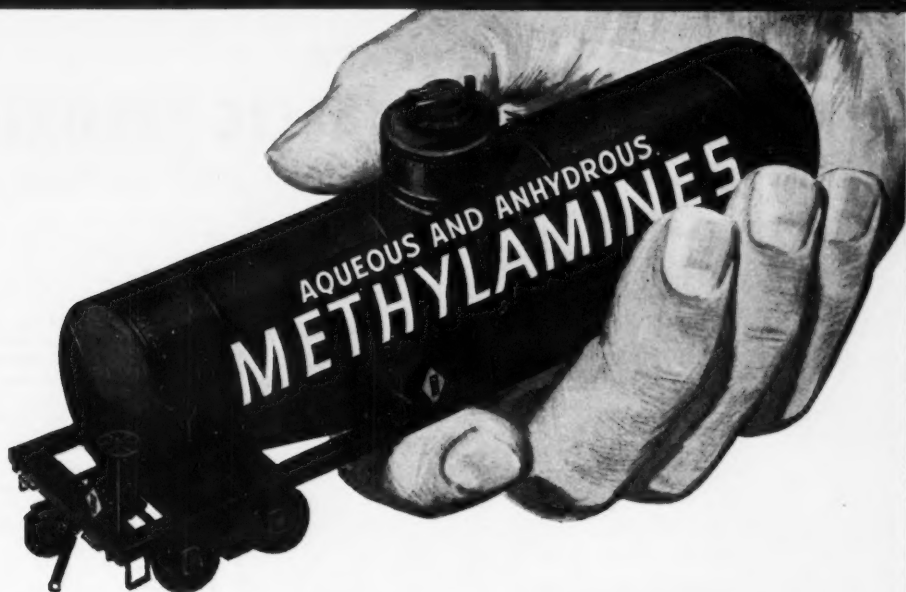
The trace elements, which have been found helpful in promoting plant growth are zinc, copper, manganese, boron, and iron. Sulfates and chlorides of these materials are ordinarily used, though the boron is generally applied as borax*. Iron salts are not employed in all cases, since most U.S. soil is fairly high in iron content. (In Hawaii, on the other hand, where there is little iron in the soil, iron sulfate sprays are a vital phase of pineapple culture.)

Not all the soluble types of plant foods are chemical salt-based; some use the so-called "organic" components. Typical of these are Cal-Spray's Ortho Grow, which contains fish waste; Smith Equipment and Supply Co.'s (Chicago) Fertil-Ade, and Pacific Guano's (Berkeley, Calif.) Gaviota.

Application Economics: There is a wide variation in the dosage rates, the frequency of application, the formulation, and the prices of these soluble plant nutrients. Generally speaking, although most of these new plant foods have a higher active content than dry fertilizers, the liquid as applied is lower in concentration than

* Typical Products: Atlas Fish Emulsion (Atlas Fish Emulsion Fertilizer Co., San Francisco); Hy-Gro (McCormick & Co., Baltimore); Hyponex (Hydroponic Chemical Co., Copley, O.); Miracle-Gro (Stern Nurseries, Geneva, N.Y.); New Plant Life (Excell Labs, Chicago); Nurish (Naco Fertilizer Co., Findlay, O.); Ortho Grow (California Spray Chemical Co.); Plant Marvel (Plant Marvel Labs, Chicago); Plant Prod. (Plant Products Co., Blue Point, N.Y.); Ra-Pid-Gro (Ra-Pid-Gro Corp., Dansville, N.Y.); Take Hold (Victor Chemical Co., Chicago); Vigoro Tablets (Swift & Co.).

* Some of the dry fertilizers are now made with Ferro Corp.'s agricultural frit, a porcelain-like material containing these trace elements, and designed to release them slowly as the frit weathers (CW, May 3).



LOW COST, LOW MOLECULAR WEIGHT AMINES AVAILABLE IN TANKCARS FROM TWO PLANTS

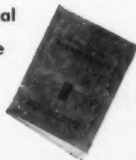
Because the methylamines combine low cost with low molecular weight, they are the most economical aliphatic amines on the market for the synthesis of organic nitrogen compounds. For this reason the list of uses for the methylamines has grown steadily since Rohm & Haas introduced them commercially in 1934.

All three amines—monomethylamine, dimethylamine, and trimethylamine—are shipped in both aqueous and anhydrous form, in drums,

cylinders, or tankcars. They are produced at two different plants, assuring their continuing availability.

If you manufacture dyes, drugs, photographic chemicals, rubber accelerators, fungicides, bactericides, weed killers, quaternary ammonium compounds, or other organic nitrogen compounds, the Rohm & Haas methylamines should be considered as readily available, low-cost raw materials.

For complete data on the physical properties of the methylamines, write for this 39-page booklet.



CHEMICALS



FOR INDUSTRY

**ROHM & HAAS
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representations in principal foreign countries

Hooker Chemical Guide (ONE OF A SERIES)

USE this handy reference to save time
in selecting high quality chemicals.

HOOKER METALLIC CHLORIDES

ALUMINUM CHLORIDE

Formula: $AlCl_3$
Appearance: Gray crystalline solid,
supplied in four standard sizes.

TYPICAL PROPERTIES

Molecular Weight 133.3
Aluminum Chloride 98.5% Min.
Sublimables in air at 950° C.
Iron 0.05% Max.
Heat of Solution 550 small cal/gm

USES

Catalyst: For Friedel-Crafts synthesis, isomerization, alkylation, polymerization, halogenation.

End Products: Plastics, resins, high octane gasoline, lubricants, lube additives, synthetic rubber, dyes, photographic chemicals, pharmaceuticals, etc.

Fluxing agent: For aluminum refining and aluminum casting.

ANTIMONY TRICHLORIDE

Synonym: Antimonous chloride
Formula: $SbCl_3$
Appearance: Yellowish solid

TYPICAL PROPERTIES

Molecular Weight 228.1
Antimony Trichloride 99%
Iron and Arsenic 1% Max.
Lead 0%
Melting Point 73.4° C.

USES

Catalyst (petroleum): With $AlCl_3$ to convert normal butane to isobutane.

Catalyst: Dyes and pharmaceuticals.

Antimony Salts: Mordant in cotton printing.

Metal treating: Antimony plating, bronzing iron, etc.

ARSENIC TRICHLORIDE

Synonym: Arsenous chloride
Formula: $AsCl_3$
Appearance: Clear, colorless to pale yellow liquid

TYPICAL PROPERTIES

Molecular Weight 181.3
Freezing Point -18° C.
Boiling Point 130.5° C.
Specific Gravity, 14°/4° C. 2.163

USES

Insecticides: In the manufacture of synthetic organic.

Poison Gases: Chemicals containing arsenics for these uses.

For detailed information on items listed, drop us a note on your letterhead. Address your request to HOOKER ELECTROCHEMICAL COMPANY, 3 Forty-Seventh Street, Niagara Falls, N. Y.

HOOKER ELECTROCHEMICAL COMPANY

NIAGARA FALLS, N. Y. • TACOMA, WASH. • WILMINGTON, CALIF.

From the Salt of the Earth

**HOOKER
CHEMICALS**

2-134

dry manures. The frequency of application is much higher though, and the dilute solution eliminates much of danger of burning tender plants.

Lately these soluble plant foods have been plugged mainly for home application, but they are being used in increasing amounts commercially. Greenhouse keepers find them convenient: Fertilizing and watering can be done at the same time. In a like manner, in the areas where irrigation is extensive, there has been considerable use of irrigation water as carrier for the plant nutrients.

Researched, Refined: Liquid fertilizers have been used for years; in recent years horticulturists at state experiment stations and university agriculture departments have worked on their development. Naco Fertilizer Co., for example, had the Battelle Research Institute (Columbus, O.) work out and test its formulation.

With the world becoming increasingly soil conscious, there's reason to expect a continued climb in the sales of the soluble fertilizers. The recent emphasis on soil conditioners, which admittedly don't do more than alter the physical structure of the soil, leaves a lot of novice gardeners expecting far more than they will get from their soils. It may be up to the plant food maker to keep the gardener's faith in the wonders of chemistry.

On the Way

Carbide and Carbon Chemicals Co. recently gave the world a peek at some of its agriculture chemical research. In an open house held at the well-known Boyce Thompson Institute (Yonkers, N. Y.), Carbide showed what it has new in fungicides, tick repellents, herbicides and miticides.

Among the products that look good is Experimental Miticide 7, a 95% concentration of butoxypolypropylene glycol. Said to be effective for greenhouse and field mite control, it may be sold in limited amounts this year.

For tomato, carnation, and peach growers, Carbide is trying out a couple of chemotherapeutants, tabbed 1182 and 1207, both as yet unavailable commercially. Compound 1182 is 4-chloro-3,5-dimethylphenoxy ethanol; 1207 is 2-norcamphane methanol, and both are for control of fusarium wilt on tomatoes and carnations, and X-disease on peaches.

Di-n-butyl adipate has shown up well as a tick repellent, may be in the stores this season. It is applied to clothing (or to dogs) either as a water-emulsifiable concentrate or by means of a pressurized spray mixture.

Experimental fungicide 5400, *alpha*,

alpha-trithiobis (N-dimethyl thioformamide), is a promising curb for plant mildews and rusts. It is not yet slated for commercial sale. Another still experimental fungicide, #224, a

mercury-zinc chromate complex, is a seed treatment.

A number of Carbide's present agricultural chemicals was developed through research at Boyce Thompson.



RINSING MESS KITS: New bullet for an old enemy.

New Kill for Battlefield Bacteria

Any seasoned soldier knows that as much danger lurks in a dirty canteen cup as behind a bush, for disease can lay him as low as a bullet. But he's not on his own in coping with bacteria—germicidal rinses have been standard issue for years. And now the armed forces are receiving the latest "magic bullet" for this unseen enemy: a trichloromelamine formulation for rinsing mess kits and contaminated vegetables in the field where boiling water is not available.

The new rinse is superior to previously-used compounds—notable among which were metallic hypochlorite-detergent mixtures—in three principal respects: It is effective against a greater variety of bacteria; is more stable; and has greater capacity. Other pluses: It's cheaper, can be easily made available in large quantities.

The formulation will minimize bacillary and amoebic dysentery. And, under field use conditions, it is the only rinse so far developed for this purpose that will kill the amoebic cyst, the tough spore form of the dysentery amoeba. Other myriad discomforts that lower the fighting man's effectiveness—including streptococcus sore throat—are also reduced.

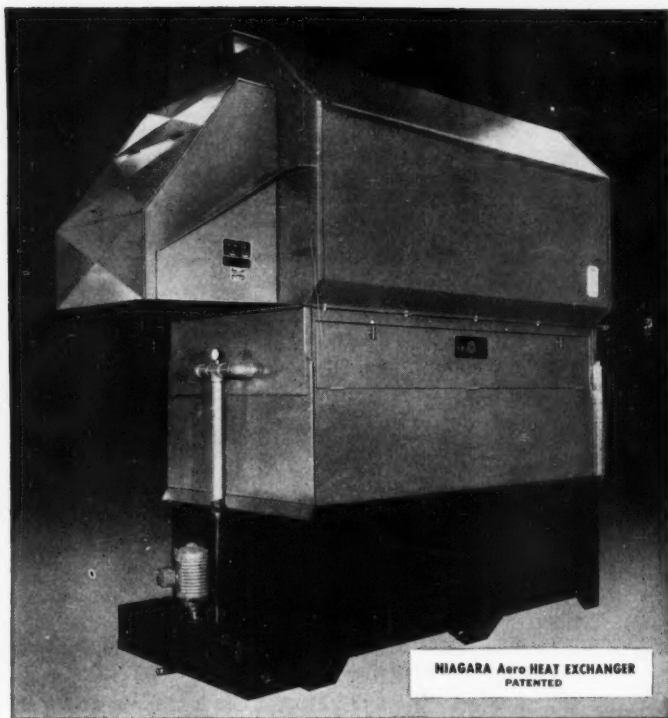
Not only does the disinfectant meet all these medically desirable goals, but it passes a major specification of the Quartermaster Corps (good capac-

ity) and the prime requisite of the soldier (ease of use). A package containing 3.35 oz. (service issue) dissolved in 25 gal. of water makes a rinse that will effectively sterilize 100 mess kits; it's merely a dip-and-slosh operation.

Recent Recognition: Although the armed forces issued its first procurement order for the formulation only a few months ago, trichloromelamine has been under evaluation for some time. First made in 1935 by Wallace and Tiernan, it was not produced commercially until 1948 when it was marketed as a sterilizer for water softeners. Later it was presented as a possible military germicidal rinse to a Harvard University research group working on that problem under the auspices of the National Research Council and on a QMC grant.

The Harvard people, headed by Shih L. Chang, evaluated the new material and developed the formulation—wetting and buffering agents in addition to the active ingredient—accepted by the military last summer. Wallace and Tiernan worked out the production technique. Probably the largest producer of the disinfectant mixture is Helene Curtis Industries (Chicago), which prepares it from Wallace and Tiernan trichloromelamine.

Troops in Europe, Korea and in other Eastern and tropical bases are just getting this material in the large



SAVE COOLING WATER

Get Many Other Benefits and Cost Savings

● Niagara Aero Heat Exchangers provide faster and more accurate cooling to specified temperatures for liquids in many industrial processes. They help lower production costs.

Cooling by the evaporative principle, they transfer heat to air, which is easily disposed of, and consume less than 5% of water used in conventional cooling methods. A Niagara Aero Heat Exchanger replaces both shell-and-tube cooler and cooling tower, and saves piping and pumping. Its savings quickly return its cost.

It helps improve the quality of production by removing heat at the rate of in-put, and by greater accuracy of control. For example, as applied to heat-treat quenching or to a chemical process cooling, provision for heating as well as cooling saves the time and prevents the product losses of a "warm-up" period.

Successful applications also include control of temperatures for jacket coolants for engines, hydraulic equipment, transformers and electronic sets, and special industrial equipment.

Write for Bulletin No. 120

NIAGARA BLOWER COMPANY

Over 35 Years of Service in Industrial Air Engineering

Dept. CI, 405 Lexington Ave., New York 17, N. Y.

Experienced District Engineers in Principal Cities of United States and Canada

INDUSTRIAL COOLING  HEATING • DRYING

NIAGARA

HUMIDIFYING • AIR ENGINEERING EQUIPMENT

SPECIALTIES.

quantities needed. Although the first government order in early 1951 was not completely filled, a second procurement contract was awarded in May.

Not the last word in field germicidal rinses (Wallace and Tiernan, QMC and the Harvard group are still looking for better ones), the trichloro-melamine formulation is the best at present for use where boiling water is not available.

And while germ-free eating utensils are the big interest of field commanders, who generally forbid troops' eating native produce, perhaps an even larger use of the germicide is in sterilizing vegetables. This application is particularly important in the East and tropics where there is danger of fecal contamination. Here again, amoebic dysentery, cholera and such diseases resulting from poor sanitation will be minimized.

Summer Casualty

Fair trade, or at least the McGuire Bill, seems definitely doomed now. Adjournment of Congress last week means that Truman will be able to kill it by pocket veto. It won't be necessary for Truman to write a veto message, since the 82nd Congress won't meet again unless summoned into special session by the President.

The McGuire Bill passed the Senate with surprising ease the week before Congress adjourned, neatly avoiding the roadblock of Sen. Pat McCarran's Senate Judiciary Committee. But Truman has definitely indicated he will not sign it, although fair traders, who have successfully pushed things this far despite heavy odds, express optimism, and will exert what pressure they can to get his okay. The deadline is this week, July 15, and if HST pockets it until then, it's dead for this session.

● **Putting on the Dog:** A new, multiple use pesticide stick has been introduced by Consolidated Chemical Works (Chicago). Dog-Stick is packaged in an applicator-container, contains methoxychlor, piperonyl cyclonene, pyrethrins, rotenone, and hexachlorophene, is said to kill insects and halt fungus.

Another Consolidated product is Dog-Tex, a liquid devised to remove dog and cat stains from rugs and carpets.

● **New Division:** The Chicago Testing Laboratory has a new Specialties Division, set up to deal with problems in paper and pulp and packaging industries. Arthur C. Dreshfield heads the new section.

BOOKS

Ultraviolet Radiation, by Lewis R. Koller. John Wiley & Sons, Inc., New York, N.Y.; ix+ 270 pp., \$6.50.

This book intends to "answer some of the questions which confront physicists and specialists in fields other than physics" relating to ultraviolet radiation. Some of the topics covered are incandescent sources of radiation, reflection, solar radiation, and detectors of ultraviolet radiation.

Glycols, by George O. Curme, Jr. and Franklin Johnston. Reinhold Publishing Corp., New York, N.Y.; xii+ 389 pp., \$12.00.

Complete information on glycols now in commercial production or whose manufacture has been or could be conducted on a commercial scale. Discussed from the technical viewpoint, especially in terms of ethylene glycol and propylene glycol, some of the topics discussed are physical properties, commercial applications, and physiological aspects.

Energy Sources—the Wealth of the World, by Eugene Ayres and Charles A. Scarlott. McGraw-Hill Book Co., Inc., New York, N.Y.; 344 pp., \$5.00.

An analysis of existing fuel supplies, an evaluation of hydroelectric, nuclear, and solar power, and a survey of other energy sources. Contains proposed programs for the future, and also discusses relative sizes of fuel reserves, efficiencies of production and conversion, and technology of production.

Technology of Coated and Processed Papers, edited by Robert H. Mosher. Chemical Publishing Co., Inc., Remsen Press, New York, N.Y.; 736 pp., \$15.00.

Contains contributions of ten authors discussing types of formulations and methods of manufacture used by paper converters as a class. Treated from the angle of the technical worker, engineer, and chemist, some of the topics discussed are water-soluble coatings, adhesives and laminating processes, paper-converting machinery, and hot-melt coatings.

Acids and Bases, by R. P. Bell. John Wiley & Sons, Inc., New York, N.Y.; vi+90 pp., \$1.50.

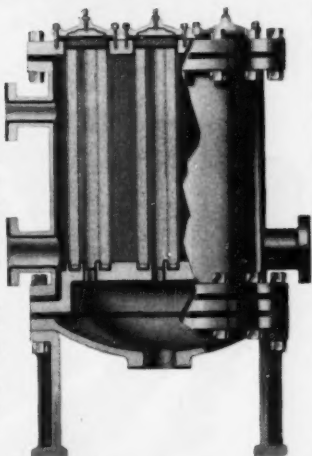
A discussion complete with tables from the quantitative behavior viewpoint. Some of the subjects treated are equilibria in water, strength and molecular structure, catalysis, behavior in non-aqueous solvents, and uses of the terms acid and base.

ADAMS

the filters with BACKWASH-ABILITY

**IN LINED FILTERS TOO
COLLECTED SOLIDS ARE PURGED
QUICKLY, EASILY, THOROUGHLY**

- Backwash without disassembly or removal of any part. Filter is on stream again in a few minutes.
- High velocity backwash with filtered fluid forced by surge tank air head insures complete purging of filter elements and shell.
- Adams Pora-Stone or Pora-Carbon filter elements, impervious to corrosion at any pH, may be used with or without filter aid.
- Choice of natural rubber, synthetic or lead linings that cannot be attacked by nor contaminate any industrial acid or alkali.



Bulletin 430 shows flow diagrams. Write for a copy.

R. P. ADAMS CO., INC. 240 PARK DRIVE
BUFFALO 17, N. Y.

**For larger-than-laboratory
amounts of
*Rare** organics**

*Phenyl Isothiocyanate, for example

write to



**Eastman Organic Chemicals Department, Distillation
Products Industries, 789 Ridge Road West, Roch-
ester 3, N.Y. (Division of Eastman Kodak Company).**
There are more than 3500 regularly supplied East-
man Organic Chemicals for science and industry.

Also . . . vitamins A and E . . . distilled monoglycerides . . . high vacuum equipment



Which way are you *growing*?

"Growing up" is very necessary in this highly competitive industrial era. All over the country, and especially in the South, new factories are "breaking through" to a future bright with unlimited opportunity . . . and with plenty of room to spread their industrial limbs.

The Harte organization is prepared to help you grow by handling your project efficiently and reasonably . . . anywhere. The Harte System provides a unique modern approach to your growth problem. In it lies a solution which provides an integrated organization of specialists geared to an up-to-date pace . . . and organization capable of carrying your project from planning to profit—*anywhere and now!*

Whatever your engineering needs might be, the Harte System will apply. A new brochure describing this modern method will show you how the Harte know-how can help you in your plans for progress. Write for your free copy today.



John J. Harte Co.

ENGINEERS
CONSTRUCTION MANAGERS

284 Techwood Drive, N. W., ATLANTA

NEW YORK » HOUSTON » MEXICO, D. F.

DISTRIBUTION..

Sulfate Shortcut

There's a world of difference between a steel company's coke oven and a farmer's field of corn, but the gap is narrowing—at least as far as the Inland Steel Co. is concerned.

Starting this month, the Chicago manufacturer is eliminating the ammonium sulfate middleman in its Inland-to-agent-to-mixer-to-farmer distribution pattern. Future sales will be direct to mixers in bulk shipments.

Jack Davis, sales manager of Inland's Railroad, Pig Iron, and Chemical Division explains that one reason for the move is the increasing market for nitrogen fertilizers in the Midwest farm belt close to Inland's East Chicago plant. This trend eliminates the necessity to sell the ammonium sulfate in the Southern states through nationwide distributing organizations.

In no case, however, will Inland sell directly to farmers. Most of the sulfate finds its way into blended formulations, and Davis sees no point in competing at the consumer level with his fertilizer-mixer customers.

Following an industry-wide trend, Inland joins the company of Bethlehem Steel and U.S. Steel in making the move. The latter company gave up its agency outlets as recently as 1947,

putting ammonium sulfate directly into the hands of its Coal Chemicals salesmen.

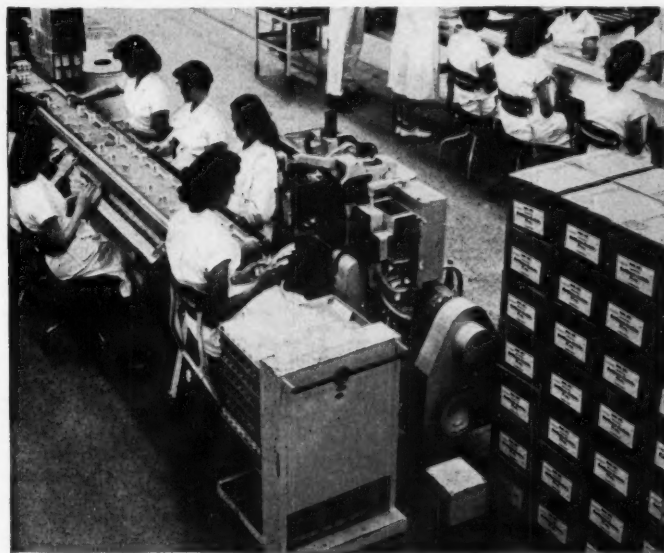
Freight Cars First

Industry traffic men, turning their companies' precious products over to the tender mercies of the omnipresent railroads, can relax on at least one score. Chances are that their freight will ride in newer, more modern cars than would an average passenger taking the same journey.

This is revealed in new statistics which cover the progress made by Class I carriers during the past ten years. In that time, only 5,000 passenger cars were bought by the lines, and these up-to-date cars amount to just 15% of the total in service.

New freight cars, in contrast, make up nearly a third of the total in their classification. Over 500,000 have been bought since 1942. This disparity is in spite of the fact that life expectancy of a freight car is 20% greater (30-year average) than its passenger-carrying equivalent.

Locomotive additions were estimated to be near the 18,000 mark. Of these, at least 90% are of the diesel-electric type, the small balance still using steam.



Ready for Distribution

IF ANY DOUBT LINGERS that Upjohn's new fermentation process (CW, Apr. 12) will give a much-needed boost to the production of cortisone, this busy packaging scene at its Kal-

amazoo, Mich., plant should erase the question mark. This is good news for the estimated 10 million sufferers of arthritis and related diseases in this country alone.

POTASSIUM BICARBONATE

U.S.P.

15 $\frac{1}{2}$ ¢

PER POUND

Dependable Source of Supply

UNITED STERLING CORP.

Empire State Building
New York, N. Y.

Deodorants
Germicides
Fungicides
Preservatives
Anti-Oxidants
Anti-Skinning
Agents

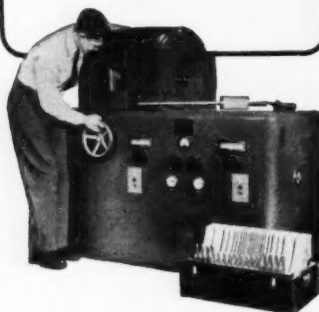
FOR

TEXTILES PAINTS
ADHESIVES
PAPER PLASTICS
SOLVENTS RUBBER
AND OTHER
CHEMICAL INDUSTRIES

SINDAR Corporation

Industrial Aromatics and Chemicals
330 West 42nd Street • New York 36, N. Y.

MULTI-PURPOSE ELECTROMAGNET FOR RESEARCH



Here is a new, multi-purpose electromagnet that will produce fields of over 40,000 gauss with only 20 KW power input. Weighing only 2 tons, its dimensions are approximately 57" wide by 32" deep by 59" high.

Easily interchanged pole pieces allow a wide variety of field patterns with just one electromagnet. Separating yoke halves, accurate mounting faces and large access openings provide simplicity of experimental set-up. Air gap is easily and accurately controlled by use of removable spacers. Enclosed construction results in minimum stray electromagnetic interference.

Because of these features, and the resulting wide range of application, the ADL Electromagnet is used in research work requiring:

High Flux Intensity

Zeeman effect studies:
susceptibility measurements,
adiabatic demagnetization

Greater Volumes and Homogeneity

Nuclear resonance experiments

Volumes Requiring 3 to 5 inch gaps

for accommodation of cryostats or furnaces.

WRITE FOR BULLETIN CWM-1



ARTHUR D. LITTLE, INC.
Mechanical Division

30 MEMORIAL DRIVE, CAMBRIDGE 42, MASS.

RESEARCH • ENGINEERING • TECHNICAL-ECONOMICS
ADVANCED EQUIPMENT

DISTRIBUTION



DELAWARE RIVER PORTS: Channel-wise, an extra fifteen feet of depth is needed.

Dredging for Prosperity

Arguments based on the defense character of U.S. Steel's new plant above Philadelphia may cause Congressmen to turn an ear to the Quaker City's earnest but heretofore unheeded plea: spend some money, dredge the upper Delaware River, make this highly industrialized area still more productive. Significance: It could further underscore the importance of the Delaware as a "chemical valley."

The lower Delaware is a sprawling river of commercial traffic, the second largest port area in the country. Down below Wilmington, molasses tankers from Cuba tie up at Du Pont's Chambers Works wharf. Farther up, on the

other side of the channel, Texas sulfur is scooped out of holds to supply the insatiable appetite of the General Chemical acid plants. And in Philadelphia itself, Penn Salt traffic men supervise the unloading of cryolite from Greenland.

But this scene of bustling industrial activity based on water transport comes to an abrupt halt near Philadelphia's northern boundary. The river narrows rapidly and, more seriously, it's shallower. What was once a 40-foot channel dwindles to a scant 25 feet, with shoals reducing this to 17 feet in spots.

The shoreline reflects this under-

water change. Factories give way to rolling meadows and the skyline is punctuated by farmers' silos instead of industrial smokestacks. For nearly fifteen miles, the Delaware valley seems to drowse sleepily with historical landmarks.

Then a second change occurs. The river takes a sharp turn to the west, and in its elbow the brick-red soil is again churning with the activities of men and machinery; and there, within a year, will be the largest steel plant ever built at one time. Around it will cluster a host of smaller concerns, to use metal from its furnaces and co-product chemicals from its coke ovens.

Flag Waving: Downstream, in Philadelphia, all this is being watched with especial interest. Delaware River planners have always felt that their stream was only half developed. To them, there was no reason why their port area shouldn't stretch all the way up to the Marine Terminal in Trenton, N. J. They watched with envy as Baltimore, Md., Houston, Tex., and Portland, Ore., each enjoyed industrial booms after deep-water channels were created for them. The same thing could happen on the upper Delaware, they were sure, if only a 40-foot channel could be dredged.

Now U. S. Steel's new plant at Morrisville gives them a better talking point than they have had in years. One important factor in Big Steel's choice for the plant site was its intention to bring in ore from its rich "mountain of iron" in Venezuela. This would have a direct effect on America's drooping reserves of high-grade ore. And since the incoming supplies would have to be transported by modern ore ships which the upper Delaware cannot at present support, the full weight of national defense can be used by the port planners in their demands for a deeper channel in the upstream half of their river.

Direct Approach: This potential ammunition is not going to waste. Latest broadside salvo is a pamphlet just issued by an organization known as the Greater Philadelphia-South Jersey Council. The twenty-two page booklet, smoothly illustrated, is frankly designed to win friends and influence Congressmen—the bulk of the first mailing went straight to Washington and to nearby state capitals. Its message is essentially simple and yet it affects every business organization which now has a stake in the Delaware valley or is planning to enter it.

Such companies include a virtual roll-call of the chemical process industries. Among the 8,000 plants along

43

CHEMICALS for the GLASS PRODUCER

CHEMICAL
DEPARTMENT
McKESSON & ROBBINS
INCORPORATED
NATIONWIDE DISTRIBUTORS OF
HEAVY AND FINE CHEMICALS

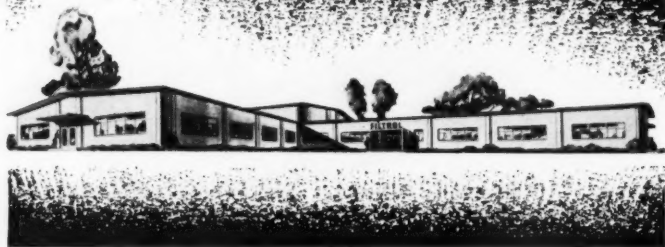


Reg. U. S. Pat. Off.

HIGRADE MURIATE OF POTASH
62/63% K_2O
GRANULAR MURIATE OF POTASH
48/52% K_2O
MANURE SALTS 20% K_2O Min.

UNITED STATES
POTASH COMPANY,
INCORPORATED
30 Rockefeller Plaza,
New York 20, N. Y.

facilities of this new *Filtrol*
research laboratory are
available to develop
chemical applications for
Filtrol products



Filtrol adsorbents, catalysts and other chemically treated materials are meeting requirements every day in...

Decolorization • Deodorization
Clarification • Purification
Drying • Polymerization
Alkylation • Isomerization
Oxidation • Condensation
Reforming • Esterification
Hydrogenation • Dehydration
Chromatography and other processes.



WRITE TODAY
for your copy of the new Filtrol pamphlet which may suggest many new uses to you.

Let us assist you with technical information, recommendations, or experimental samples.

Filtrol Corporation maintains comprehensive research facilities, modern control laboratories and a qualified staff for technical service. You are welcome to any or all of these services.

Filtrol *
CORPORATION
CHEMICAL DIVISION

General Offices:
727 West 7th St., Los Angeles 17, California

*T. M. Reg. U. S. Pat. Off.

THE WORLD'S LARGEST MANUFACTURERS OF CATALYSTS, ADSORBENTS, DESICCANTS AND OTHER CHEMICALLY TREATED MATERIALS

DISTRIBUTION.

the river are those of such companies as Rohm & Haas, Allied Chemical & Dye, Sharp & Dohme, Atlas, Hercules, Du Pont and many others. Moreover, by the end of this year the closely allied petroleum refining industry will likely recognize the Delaware basin as the largest producing area in the country outside of Texas itself.

The market area these plants serve is one of the richest in the world. A hundred-mile circle around Philadelphia would circumscribe less than 1% of the nation's land area—yet 21 million people representing 14% of the U. S. population live within its arc. If the radius of the circle were increased to 300 miles, over a third of the population would be included.

Quick Return: The major bottleneck to the continued rapid expansion of the Delaware River area as an industrial cornucopia—the shallowness of the stream above Philadelphia—could be removed for only \$94 million, according to the Council's arguments. This claim is based on estimates made by the Corps of Engineers. In addition, from the U. S. Treasury's own point of view, such an outlay would be a good investment—every week it receives a million dollars in custom receipts from the Port of Philadelphia alone. Thus in less than two years the current level of revenue would pay off all the costs of sharply increasing the river's productive capacity.

But this kind of money is not always easy to obtain. In the last fifty years only \$105 million has been spent by the Federal Government on the maintenance and improvement of the Delaware—in spite of the fact that over \$1.5 billion has been collected during the same period from Delaware River shipping. Now the Council is hopeful that the legislatures will recognize the penny-wisdom pound-foolishness of their past ways and will provide the 40-foot channel to Trenton which will open up a whole new section to the industrial East. Delaware valley steel, oil, and chemical businessmen have their fingers crossed too; their own future is tied to the Council's success.

Tramp Troubles

Process industries which depend on raw-material imports or bulk export sales are watching an index which is spelling out both good news and bad. The steadily falling level of international chartering rates for dry-cargo tramp vessels—as compiled by *Norwegian Shipping News*—may indicate lower transportation costs; but it also

underlines the gloomy outlook for international trade.

The index has been slipping now for over a year—after reaching a post-Korea high in May and June of 1951. Here is the pattern for the last twelve months reported:

(July-Dec. 1947 = 100)		
Month	Trip Charter	Time Charter
1951		
JUNE	190	238
JULY	177	214
AUG.	176	205
SEPT.	182	228
OCT.	186	231
NOV.	192	250
DEC.	178	238
1952		
JAN.	168	224
FEB.	159	222
MAR.	138	150
APR.	128	130
MAY	125	124

"Taint So: Another straw in the wind signalling continued uncertainty among American shipping circles is the furor that went up over the rumor that Uncle Sam was about to lease fifty moth-ball ships to a Japanese company. Press reports that the Maritime Administration has been giving such a move serious consideration are being vigorously denied in Washington.

Foundation for the rumor was an informal request that the State Department investigate the matter. But State is trying to let the idea die a natural death, is not making any overtures to the Maritime Administration which has the ships.

The request was made by a Japanese firm known as The American Ship Operating Company. Its main activity up till now has been to operate a fleet of LST's between Japan and Korea for the Military Sea Transportation Service.

The Japanese tried to sweeten up their Liberty ship overture by promising that the chartered vessels would be used only for Korean War cargoes out of Japanese ports. But they also let it be known that they would not mind at all being given permission to buy the ships eventually.

This last possibility is what has American fleet owners in a dither. Once the Japs gain title to the carriers, there is little doubt that they wouldn't try to enter them on worldwide trading routes. With lower operating costs, the Nippon operators could raise hob with an already difficult competitive situation.

But such an occurrence is a very dim possibility. The Ship Sales Act of

Are your **CHEMICAL INTERESTS** *Closely Held or* *Family Owned?*

This bank specializes in chemical financing, particularly in connection with closely held or family owned companies.

We believe in the soundness of the American chemical industry and its prospects for growth and will look sympathetically upon companies or individuals who have financial problems in this field.

Chemical Department

Empire Trust Company

120 BROADWAY, NEW YORK, N. Y.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

FOR WATER-REPELLENT FABRICS

USE *Niacet* **POWDERS**
TRADE-MARK

NIAPROOF Basic Aluminum Acetate

Al₂O₃ Content—35.5 to 37% by weight

Aluminum Formo Acetate

Al₂O₃ Content—31.0 to 33.0% by weight

These water-soluble, white powders make excellent water-repellent preparations for the treatment of all types of textile fabrics.

ADVANTAGES OF POWDER OVER SOLUTIONS

STABILITY . . . No more losses due to precipitation of solutions. High aluminum content available gives dependable results time after time.

PURITY . . . No injurious sulfates or chlorides to tender the fabric. No contamination or discoloration from containers.

SAVINGS . . . Lower cost per pound of Al₂O₃ content. No leakage losses on transportation and storage. Lower freight due to negligible water content. Lower handling and storage costs. Containers can be re-used or re-sold.

Carbide and Carbon Chemicals Company

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street **UCC** New York 17, N. Y.

The terms "Niacet" and "Niaproof" are trade-marks of Union Carbide and Carbon Corporation.

INDOPOL

REG. U.S. PAT. OFF.

Polybutenes

- **viscous**
- **light color**
- **stable**
- **low carbon residue**

INDOPOL Polybutenes are widely used for quality improvement and cost reduction of calking and sealing compounds, adhesives, surgical and industrial tapes, tracing paper, rubber products, tree bands and in electrical insulation.

Low carbon residue, due to the depolymerization instead of cracking at high temperatures, has led to important applications in greases and lubricants for high temperature service and in rolling or drawing oils for aluminum, etc., where annealing is the only after-treatment.

Dependable supply in seven viscosity grades from 100 S.S.U. at 100° F. to 3000 S.S.U. at 210° F.

INDOIL CHEMICAL COMPANY

910 SOUTH MICHIGAN AVENUE • CHICAGO 80, ILLINOIS

INDOIL®
CHEMICAL PRODUCTS

DISTRIBUTION.

1946 has run out and any further sales would have to be approved by Congress. The latter's present mood is reflected in the recent tabling by a House committee of a Senate bill authorizing the Maritime Administration to sell several small coastal vessels to the South Korean Government. Japanese requests would probably receive an even quicker negative Congressional answer.

For Antibiotics: A new synthetic amyl acetate—especially developed for use in the manufacture of antibiotics—is now available from Sharples Chemicals. It is designated as Pent-Acetate 29 and contains a minimum of 92% amyl acetate. For years the material has been in wide-spread use as a lacquer solvent, but this new grade recognizes its newer importance as a penicillin extractant.

From Searles Brine: The American Potash & Chemical Corp. has added two more inorganic chemicals to the list of commercially produced products which it is obtaining from the Searles Lake brine at Trona, Calif. One of these is sodium pentaborate for weed killing, cotton defoliation, and fireproofing compositions. The other is a potassium pentaborate designed for use in the glass, enamel, and ceramic industries.

Another Step: The reorganization of the Bakelite Co. sales activities (CW, June 21) is moving apace. Latest step is the creation of a Molding and Extrusion Materials Department, headed by John Benedito, which will handle all such materials made by Bakelite—whether or not they are thermosetting or thermoplastic (the earlier basis for dividing up Bakelite's product line).

Cabot Plasticizers: Boston's Godfrey L. Cabot is going all-out to become as big a name in the plasticizer field as it is today in the manufacture of carbon blacks. A special laboratory has been set up to do both basic research and technical service functions for plasticizers customers. One result of this new activity is the availability of two additional Cabot products: Cabflex DDA (di-decyl adipate) and Cabflex DDP (di-didecyl phthalate).

PICTURES IN THIS ISSUE:

Cover (top) — Cianci Studio; Cover (bottom) — Aluminum Co. of Amer.; p. 11 (left & right) — Wide World Photos; p. 12 — Syd Karson, McGraw-Hill Photo; p. 14 — Philip Gendreau Photo; p. 19 — Williamson Photo; p. 36 — Lederle Labs; p. 51 — Upjohn Co.; p. 52 — Aero Service Corp.; p. 61 — Pennsylvania Salt Co.

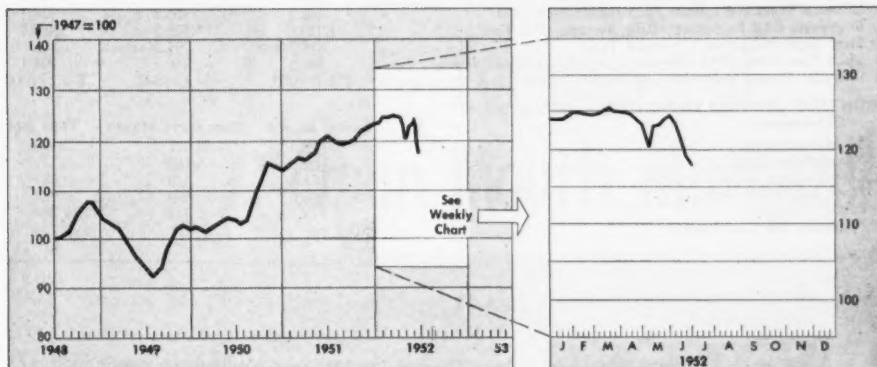
•

SEND

FOR

BULLETIN 12

MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

MARKET LETTER

Stickiest market news of the week concerns the running blackstrap molasses hassle between Cuban producers and U.S. ethyl (fermentation) alcohol makers. Cuba, up until now, adamant in its 20¢/gallon demand for the molasses, suddenly relented last week, offered a 12¢ f.o.b. Cuba price.

But the alcohol boys nixed the deal—sensed a joker. And this was it: On the f.o.b. Cuba terms they would have to shell out about 20% more to cover costs of shipping to the U.S. This would, in effect, raise the price per pound to about 14½¢.

Some American buyers are willing to go along with the 12¢/pound price—but the terms would have to be f.o.b. New Orleans, not Cuba.

A one-sided rippet flared briefly in Washington too, last week, when cellophane manufacturers verbally spanked NPA for listing cellophane as a scarce material in its Revision of Designation 1.

NPA, roundly chastened, explained it was an error and assured the industry steps are being taken to have the item removed from the list.

Incidentally, carbon bisulfide, sulfuric acid, caustic soda and wood pulp—raw materials used by the cellophane makers—are reported as being in adequate supplies.

It's no news that the mantle of "adequate supplies" has been draped over many chemical standbys in the current period of softening markets. The surprise, if surprise there is, comes in how quickly a product is "fitted."

Phthalic anhydride, for instance: A few months ago some consumers were having difficulties getting all they needed. By this week one producer describes phthalic as "readily available."

And there are others. Pesticides like DDT, BHC are moving through reseller's hands at somewhat below manufacturers' schedules. The going market price for DDT is about 38¢/pound; resales are reported at about 36¢. Benzene hexachloride can be had for less than the pegged .013¢/gamma unit.

Copper sulfate supplies are increasing, too. Prices, in some quarters are being shaved as much as 1¢/pound. One industry-wise jobber

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
Chemical Week's Output Index (1947=100)	118.2	118.5	119.7
Chemical Week's Wholesale Price Index (1947=100)	103.2	103.2	107.7
Bituminous Coal Production (Daily Average, 1000 Tons)	1,120.9	1,525.0	1,496.0
Steel Ingot Production (Thousand Tons)	314.0(est.)	295.0(actual)	
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	247.5	249.4	234.1
Chemical Process Industries Construction Awards (Eng. News-Record)	\$16,003,000	\$1,196,000	\$13,240,000

MONTHLY BUSINESS INDICATORS—EMPLOYMENT (Thousands)

	Latest Month	Preceding Month	Year Ago
All Manufacturing	12,559	12,712	12,993
Non-durable Goods	5,308	5,398	5,587
Chemicals and Allied Products	518	530	531
Paper and Allied Products	396	399	424
Rubber Products	214	213	220
Petroleum and Coal Products	186	197	194

feels supplies are adequate enough to start exporting—but the government says "No."

On the other hand, even resellers are having a tough time getting coal-tar benzene. But that, of course, is only in areas dependent on the coal derived product. Manufacturers' schedules list benzene at about 35-40¢/gallon. The open market is bringing a range of 50-55¢—when available.

But not all news is being made in the market place. Some still emanates from Washington. And this week soybean processors have Price Stabilizer Ellis Arnall in a tight spot. He must decide to 1) Grant the processors a ceiling price increase, or 2) Have the courts do it for him.

A \$6/ton-hike (from \$81 to \$87 is what the industry has been asking for since May (CW, Market Letter, May 17)—now says OPS has dawdled longer than the legally required one month in which to make a decision.

Result: A petition to the U.S. Emergency Court of Appeals asking the court to "command" Arnall to either grant or deny the increase.

And another oil is agitating, not quieting troubled waters. Some castor oil processors are complaining that the item is "hard to sell." But not because there's a lack of demand. The reason (say castor oil men): "Government buying, stockpiling doesn't leave us as much to sell as we could."

In this country OPS has taken its first action to bring out more non-Frasch sulfur intended for export. The agency granted Western Sulfur Industries of Boston, these new ceilings: \$104/long ton (for 99½% sulfur), bulk, f.o.b. Sulphurdale (Utah) on sales for export; \$114/ton on actual export sales.

International Materials Conference member nations are committed, of course, to supply friendly countries with a large share of their sulfur output.

The "new" Japan is in there pitching, too, where sulfur is concerned. By September it will have exported a total of 23,000 tons. Japan's IMC export allocation for the first six months of this year was 11,000 tons. These large shipments, however, have resulted in a marked decrease in sulfur stocks at mines and on the Japanese market.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending July 14, 1952

UP	Change	New Price	Change	New Price
Diorthotolylguanidin, drms, ton lots	\$.02	\$.50		
DOWN				
Naphthalene, crude, imp.	.0025	.0475		

All prices per pound unless quantity is stated

a new development
for users of
Open Mouth Multiwalls!

BAGPAK PREFORM*

—makes bag top forming easier!
—speeds your bag closing operation!

Bag tops can be prepared for closing easier,
faster and neater because of the built-in
crease in Bagpak PREFORM Multiwall
Bags. Bag closing operations are speeded up
—and the finished package looks better!

REDUCES BAG COSTS!

In many cases, the Bagpak PREFORM
crease permits bag lengths to be reduced.

SEND COUPON TODAY for full information!

INTERNATIONAL PAPER COMPANY
BAGPAK DIVISION
220 East 42nd Street, New York 17, N. Y.

K-4

Gentlemen:

Please send me full information about the new Bagpak
PREFORM Multiwall Paper Bags.

NAME _____

ADDRESS _____

*Trade Mark

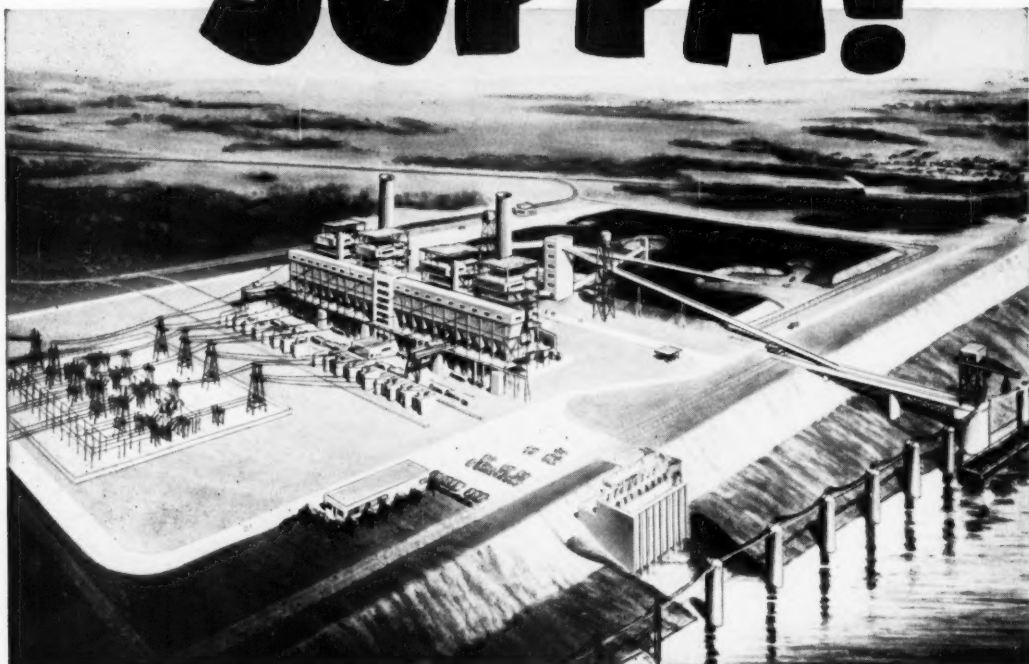


International Paper COMPANY

BRANCH OFFICES: Atlanta • Baltimore • Boston • Chicago • Cincinnati • Cleveland • Denver • Detroit • Kansas City • Los Angeles • Miami • New Orleans • Philadelphia • Pittsburgh • St. Louis • San Francisco • Seattle • Toronto • Vancouver • Washington • Wichita
CANADA: The Continental Paper Products Ltd., Montreal • Ottawa • Toronto

BAGPAK DIVISION

what's **JOPPA?**



New electric generating station at Joppa, Illinois.

It's a fabulous new power center

—AND MORE. JOPPA HAS:

- ... plenty of power (1,300,000 k. w.) for new industries
- ... access by river to Gulf Coast sulphur and petroleum
- ... coal available with transportation cost only 85 cents per ton
- ... an inexhaustible industrial water supply
- ... barge facilities now ready for multi million tonnage movement
- ... good central market location—plenty of unemployed labor
- ... very low taxes . . . airport within 20 miles
- ... plant sites available on railroad and river
- ... limestone, fire clay, silica, hardwood all close by
- ... natural gas (main line service)



TO THE CHEMICAL INDUSTRY Joppa offers exceptional advantages. For detailed information write our Industrial Department in Chicago.

...served by the **C&EI**

- fast freight and passenger service

CHICAGO & EASTERN ILLINOIS RAILROAD

332 South Michigan Avenue, Chicago 4, Illinois



NATURAL CRYOLITE: Cause for cheers—but for how long?

Plea for Cryolite

Government sees the source of natural cryolite petering out, asks for additional synthetic production. This poses a problem to the sole U.S. crude cryolite processor: Will it switch to making synthetic?

Outlook: The nation, one way or another, is assured of enough cryolite for its vital aluminum needs. And the government will pick up a \$1 million tab as its share of the "assurance" program.

This week on the wharves near Philadelphia, Pennsylvania Salt Manufacturing Co. men may cheer as a cargo ship from the Far North is made ready for unloading. And there is reason for joy. The hold of that ship is bulging with natural cryolite* (from the world's only known commercial source, Ivigtut, Greenland) destined for Pennsalt (the only major U.S. processor of the crude ore).

But if additional cryolite is important to Pennsalt, it is even more so to the nation's aluminum hopes (more than 3 billion pounds by 1953).

The government, through the Defense Production Administration, recently set an expansion goal for the production of 50,000 tons of synthetic cryolite annually in 1955—a 21,600 ton increase over present capacity. Some of the DPA's reasons for the cryolite need were pretty compelling:

- The only known commercial source

* Chemically cryolite is sodium fluoaluminate. Raw materials for the synthetic product are fluorspar, sulfuric acid, hydrated alumina, sodium carbonate.

of natural cryolite (Greenland) is petering out; mines are not expected to be productive for more than another decade.

- Current synthetic cryolite production is not great enough to meet present, future requirements.

- Cryolite is "indispensable" in the electrolytic reduction of aluminum; availability is a "definite limiting factor" in expanding aluminum output.

But while DPA's reasons were poignant, they left some industry people slightly unimpressed.

Natural Dilemma: Among them is Pennsalt, the only processor of the crude ore. While it agrees with DPA that known ore reserves in Greenland are limited, Pennsalt believes it will not be short-changed in its current contract with the Danish company which mines the ore. New contracts have been negotiated periodically, the first in 1865. The latest, signed in 1950, expires in 1965.

Pennsalt maintains that at the 1950

Nitrates

Potassium

Sodium

Barium

D

DAVIES NITRATE CO. INC.
118 LIBERTY STREET
NEW YORK 6, N. Y.

SAVE MONEY ON PACKAGING

WITH CONTAINERS
OF MOLDED PAPER
by *Keiding*



Ideal for granulated substances, powders, soaps, abrasives, even some liquids and semi-liquids, Keiding Molded Paper Containers are amazingly strong, light in weight and low in cost.

You may find many economical uses for these containers. They're sturdy enough for shipping, attractive enough for a sales and display package, these containers are available in a wide variety of sizes and shapes. Standard color is white. Write for prices and samples.

Available in nine sizes, ranging from 1 pint to 5 gals., with covers tight-fitting. (Not recommended for shipping liquids.)

KEIDING PAPER PRODUCTS CO.

3048 North 34th Street, Milwaukee 10, Wis.
Largest Manufacturer of Molded Paper Containers

tracers...to opportunities in the chemical

REPLIES (Box No.): Address to office nearest you
NEW YORK: 530 W. 42nd St. (41)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

MANAGEMENT SERVICES

DATA ENGINEERS, INC.

Engineering that "Counts"
Designers & Manufacturers of
Data Recording Instruments
4408 Ravenswood Ave., Chicago 40, Ill.

Evans

Chemical Research—Processes—Products
Development Problems
Complete Laboratory—Pilot Plant
Mechanical & Optical Sections
Ask for new Scope Sheet C
listing over 100 of our activities
EVANS RESEARCH & DEVELOPMENT CORP.
250 East 43rd St., N. Y. 17, N. Y.

THE JAMES F. MUMPER CO.

Engineers
Plant design, buildings and services. Details &
specifications. Process & equipment development.
Modernization, improvements, surveys & reports.
313-14-15 Everett Bldg. Akron 8, Ohio.
Phone, Ja. 9539 — Ja. 4543

JAMES P. O'DONNELL

Engineers
CHEMICAL PROCESS PLANTS
Design—Procurement—Construction Supervision
39 Broadway, New York 6

HILLARY ROBINETTE, Jr.

Chemical Consultant
TECHNICAL AND ECONOMIC SURVEYS
PRODUCT DEVELOPMENT
CHEMICAL MARKET RESEARCH
P. O. Box 607 Ardmore, Pa.
Telephone: Ardmore 6457

EMPLOYMENT

Positions Wanted

Are You Planning a

CANADIAN SUBSIDIARY?
—then perhaps you could use the services of a
Canadian chemical engineer with 12 years' experi-
ence and top academic standing. Proven record of
accomplishment in production supervision, sales,
engineering, and project management. Age 33.
Presently employed. Resumé furnished upon request.
PW-4807 **CHEMICAL WEEK**
330 W. 42 St., New York 36, N. Y.

Brazil: Technical Sales-Market Development
American Ch. engineer, business background, 30,
single, connections. Portuguese, Spanish perfectly.
5 years: Industrial economics, process & packaging
equipment, instrumentation adhesives, pharm. &
food specialties, etc. Administrative record, top
references. Ability, character & personality above
average. Aces Employment Agency, R. 7 de Abril
264 (a601-A) Sao Paulo.

Selling Opportunity Wanted

Reg. Engineer with Tech Sales experience now
setting up agency on West Coast. Interested in
additional materials or equipment. RA-4704.

SPECIAL SERVICES

Processes

Custom Manufacture?

Eastern chemical producer has substantial fa-
cilities for the manufacture of fine chemicals
and chemical specialties. All inquiries confi-
dential.

Box CW3723 **Chemical Week**
330 W. 42nd St., New York 36, N. Y.

EQUIPMENT—used-surplus

For Sale

Autoclaves, tile ind; 3375 gal. First Machinery
Corp., 157 Hudson St., N.Y. 13, N.Y.

Autoclave—1 Gal. S.S. 1000# int. jckt. & agit.
Arthur Proc. Equip. Co., 135 Broadway, New
York City, Barclay 7-7026.

Autoclave—Steel, 500 Gal. ASME, 300# int.
horiz. jckt. 7 agit. Arthur Proc. Equip. Co., 135
Broadway, New York City, Barclay 7-7026.

Calenders, New Rubber Calenders, 6x12", John-
son joints, 7½ HP motor, Complete. Eagle Indus-
tries, 108 Washington St., NYC.

Centrifugal 36"x40", Bird, Continuous, Consoli-
dated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird 48", Rub. Covered. First Machi-
nery, 157 Hudson St., N.Y. 13, N.Y.

Colloid Mill Charlotte No. 20 used only few
hours. Cast steel rotor & Stator. Bargain. L.
Stanhope, Rosemont, Penna.

Dryer, Vacuum Shelf, 30 shelves, 59 x 78, pump,
cond. (6). Consolidated Products, 18 Park Row,
N.Y. 38.

Dryers, 2 BvK 32x90 dbl. drum, SS accessories,
comp. Eagle Industries, 108 Washington St., NYC.

Evaporators; Sextuple Eff. 58,200 sq. ft. First
Machinery Corp., 157 Hudson St., N.Y. 13.

Filter Press, 18" x 18", Sperry, iron, P & F, 11
chambers. Consolidated Products, 18 Park Row,
N.Y. 38.

Filter Press, 30" x 30", Iron, Sperry, steam heated,
30 chambers. Consolidated Products, 18 Park
Row, N.Y. 38, N.Y., Barclay 7-0600.

Filter Press, 30" x 30", Aluminum, 45 Chambers.
Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 42" x 42", Iron, Shriver, 18, 27, 36,
54 chambers (12). Consolidated Products, 18
Park Row, N.Y. 38.

Filter Presses, all sizes and types. Process Indus-
tries, 305 Powell St., Brooklyn 12, N.Y.

Filters, all sizes and types. Perry Equipment,
1415 N. 6th St., Phila. 22, Pa.

Granulator, Allis Chalmers, Ball, 4'6"x7", iron
lined. Used 100 hours. Consolidated Products, 18
Park Row, New York 38, N.Y. BA 7-0600.

Kettles, S/S, 300 gal. and 200 gal., 100#, W. P.
Consolidated Products, 18 Park Row, N.Y. 38.

Mills, New Rubber Mills, 6x12, 6x14, 6x16", John-
son joints, Complete. Eagle Industries, 108 Wash-
ington St., NYC.

Mills, Raymond #5047 & 5057, High Side Roller,
(2). Consolidated Products, 18 Park Row,
N.Y. 38.

Mills, Traylor tube, 5'x22", 5'x20", 4'6"x18'6",
4'x13', stone lined, pebble charge (4). Consoli-
dated Products, 18 Park Row, New York 38, N.Y.

Mixer, Lab, BP Vacuum, 7½ gal. jktd. MD. Com-
plete. Eagle Industries, 108 Washington St., NYC.

Mixers, 700 gal. Turbo, Simplex, jktd. (2). Con-
solidated Products, 18 Park Row, N.Y. 38.

For Sale

Mixers, horiz. ribbon, 14'x7'6"x6', jktd. 600 cu.
ft. (2) Consolidated Products, 18 Park Row,
N.Y. 38.

Pebble Mills; 8'x8', Porcelain lined. First Machi-
nery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined,
20. Consolidated Products, 18 Park Row, NY 38.

Reactors—New SS from 50 to 1000 gals. Equip-
ment Clearing House, Inc., 289 10 St., Bklyn 15.

Reactors—Pfaudler 30 to 300 gallons. First Machi-
nery Corp., 157 Hudson Street, N.Y. 3, N.Y.

Tablet Press, No. 5½, Colton 3" maximum. Consoli-
dated Products, 18 Park Row, N.Y. 38.

Tanks, Alum, Pressure—330 and 480 gal. Perry
Equipment, 1414 N. 6th St., Phila. 22, Pa.

Tanks, S/S, from 30 to 5700 Gal. Perry Equip-
ment Corp., 1415 N. 6th St., Phila. 22, Pa.

Tanks, SS, from 180-10000 gal. jktd. storage,
agtd. Eagle Industries, 108 Washington St., NYC.

Tanks, S.S. Storage & Mixing, all capacities.
Process Industries, 305 Powell St., Brooklyn 12.

Tanks 432 Storage tanks, largest stock in coun-
try; all sizes. Chas. S. Jacobowitz Co., 3080
Main St., Buffalo 14, N.Y. Phone AMherst 2100.

Tanks, 2 10000 gal. SS Storage, excel. Cond.
Eagle Industries, 108 Washington St., NYC.

Tanks, 6500 gal. capacity, steel storage, recover-
ed from dismantled tank cars, coiled & non-
coiled. Marshall Railway Equipment Corp., 30
Church St., N.Y. 7, N.Y.

Wanted

Wanted at Once

Chemical Equipment for Defense Plant Work
Autoclaves
Centrifuges
Dryers
Filters
Pulverizers
Kettles
Mixers
Presses
Pulverizers
Tanks
Interested in complete plants—either new operating
or idle. Give full particulars when writing.
W 3117 **Chemical Week**
330 W. 42nd St., N.Y. 36, N.Y.

Machinery, Chemical and Process. Everything
from single item to complete plant. Consolidated
Products, 18 Park Row, N.Y. 38.

DEALERS in used-surplus

Consolidated Products Co., Inc.

Oldest and Largest Dealers
in Used and Rebuilt Machinery.

18 Park Row, New York 38, N. Y.
Barclay 7-0600

Shops: 331 Doremus Ave., Newark 2, N. J.

Your FIRST Source

**NEW YORK'S
LARGEST STOCK
RENTAL-PURCHASE PLAN**

FIRST MACHINERY CORP.
157 Hudson St., N. Y. 13
Phone WORTH 4-3900

R. Gelb & Sons, Inc.

Largest stock of used chemical
equipment in the United States
66 Years of Leadership

R. Gelb & Sons, Inc.
Union, N. J.
Unionville 2-4900

process industries

CHEMICALS & Raw Materials

Wanted

Chemical Service Corporation

WANTED — SURPLUS

Chemicals, Plasticizers, Solvents
Drugs, Pharmaceuticals, Oils
Pigments, Colors, Waxes, etc.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street, New York 5, N. Y.
MANover 2-6970

BUSINESS OPPORTUNITIES

Chemical Proposition Wanted (Participating) by experienced (large scale & small scale) "inside man." Reply EO-4774, Chemical Week.

PLANTS - PROPERTIES

For Sale or Lease

STATEN ISLAND

80,000 Sq. Ft. 4 Stories
100% Unrestricted Bldg.

IMMEDIATE OCCUPANCY

Suitable for chemicals, paints, tannery or similar industries. Excellent for storage.

Sale or Lease

• 3 car RR siding • 150 ft. deep water bulkhead with boom • Sprinkler system • Oil heat • Elevator • Panghorn blowers • Drive-in & loading platforms • Additional building has 3 silos with conveyor (200 ton capacity) • 10 minutes St. George ferry • Bus passes door • Parking on premises.

Excellent Proposition for Right Party

Adams-Fisher Co.

32 B'way, N.Y.C.

WH 4-4622

MISCELLANEOUS

Wanted to Buy

Chemical Abstracts back volumes wanted to buy for cash. We buy also all other scientific and technical periodicals. Ashley, 24 East 21, N.Y.C. (4)

to reach
18,900
V.I.P.'s

yes, use this new section of **CHEMICAL WEEK** whenever you want to offer a business opportunity—a position—used or surplus chemicals and chemical equipment.

And this is fast service—if your advertisement is received in our New York office by Wednesday it will appear in the issue dated 9 days later.

For information just write

tracers

CHEMICAL WEEK

MARKETS

conferences the subject of the life of the mine was carefully considered. Conclusions reached at the negotiations are the basis for Pennsalt's belief: The Ivigtut mine can and will supply usable cryolite for longer than the terms of the present agreement.

Cryolite is one of the principal raw materials for a number of Pennsalt's fluorine-containing specialties. It has imported varying amounts averaging 12-16,000 tons/year for the last 10-15 years. About 55-60% of this had been taken by aluminum producers, but in the present crisis virtually all of the refined material is finding its way to U.S. aluminum pot lines. The small balance is hitting the markets, in various formulations, under Pennsalt tradenames ("Kryolith", its purest commercially available cryolite; "Kryocide", for agricultural applications; "Rimflux", for ferrous metallurgy).

At the present time Pennsalt is obtaining about 12,000 tons a year from Ivigtut. However, the U.S. Government has stepped into the picture, will now make it possible to augment that amount with an additional 19,000 tons of crude ore for Pennsalt.

Government officials have approved spending \$1 million to purchase the extra ore from the Danish State mines—at about double the price Pennsalt is paying Greenland.

The deal works like this: Pennsalt imports the higher priced ore, refines it, then sells it to aluminum companies at the ceiling price. The government reimburses the processor for the difference between the purchase price and its private contract price. In dollars and cents the million dollar subsidy in effect boosts the price of the additional refined cryolite to about \$260/ton. Pennsalt customers, however, will still pay the OPS ceiling price, \$190/ton. Washington picks up the tab for the \$70 a ton difference.

But synthetic cryolite may be up to about \$280/ton, so by and large the subsidy could be a good deal—for the time being.

You can be sure of one thing, though, there will be no renewal of that subsidy. Some government officials were very reluctant to pay the Danish price—felt the U.S. bowed to a "take it or leave it" demand.

Problem Coming Up: If the quality of cryolite ore now coming out of Greenland indicates the deposit is petering out, as Uncle Sam says, then Pennsalt has a problem. What happens to its cryolite business if there is no natural crude? Obviously the processor has a choice of two solutions: Pull out of the cryolite business or start making a synthetic product.

The latter would probably get the nod—providing economic factors are favorable. Background: Pennsalt has all the required raw materials for producing synthetic cryolite; it once built just such a plant for the government.

Synthetic Insurance? Aluminum reduction is the major cryolite consumer. The initial charge for an aluminum pot line requires a lot more cryolite than does make-up, but a running cell usually takes about 2½ pounds of cryolite for every 100 pounds of aluminum produced.

Synthetic producers, along with the natural processor, are taking mild exception to a statement in DPA's expansion goal announcement. These producers—aluminum companies who, for the most part, make cryolite for captive consumption—think DPA is somewhat pessimistic in reasoning that cryolite is "insufficient" to meet present and future requirements of the aluminum industry.

On the other hand, the government agency may just be making certain that that will be so. In its cry for more cryolite DPA mentions "additional facilities" to be constructed. The agency is referring to Alcoa's Aluminum Ore Co. plant in East St. Louis, Ill.

Alcoa's actual 1951 cryolite production at this plant was 10,000 tons. After new equipment is installed, its capacity will be about 21,000 tons/year. The government is also counting on an additional 1,800 tons/year from Kaiser Aluminum's recovery plant and, from Reynolds Metals (also recovery), about 4,800 tons the first year from pot lines and flue gases, about 1,500 tons/year thereafter.

That leaves about 5,000 tons additional capacity in the announced goal for someone else to make.

What Price-Tag? Industry sources say that Alcoa is not too happy over the "chore" of producing most of the asked for synthetic cryolite. When the company recently proved it was taking a loss on the operation, OPS granted a ceiling increase to provide a break-even price. The new ceiling, effective September 1, is 10.98¢/pound. All of the additional 10-11,000 tons it will produce annually will theoretically be purchased by the government for use by other aluminum companies or to be added to the national stockpile.

But even though government officials, the natural processor and synthetic producers, at times apparently do not see eye to eye in the cryolite hassle, you can be certain of one thing: The nation, one way or another, is assured of enough cryolite for its defense needs.

BOOKLETS

Chemicals

Barden Clay

4-p. technical brochure describing properties of Barden Clay, a pesticide diluent. Discusses factors in choosing a pesticide diluent and includes comparison tables. J. M. Huber Corp., 100 Park Ave., New York 17, N.Y.

Stearic Acid

8-p. technical report on effects of stearic acid on physical properties of CR-S tire tread compounds, pigmented with high-abrasion furnace black. J. M. Huber Corp., 100 Park Ave., New York 17, N.Y.

Industrial Cleaner

A service bulletin entitled "How to Make Industrial Work Come Clean" explains how new cleaner, Pensal W, removes heavy soils and grease. Pennsalt Chemicals, Laundry and Dry Cleaning Department, 1000 Widener Bldg., Philadelphia 7, Pa.

Glucosates

4-p. announcement of availability of glucosate in drums and description of uses against corrosion, scale, and algae. D. W. Haering & Co., Inc., Harlandale Sta., San Antonio, Tex.

Pent-Acetate

20-p. booklet entitled "Pent-Acetate in

Lacquer" discusses film flow, evaporation rates, blush resistance, and solvent power of Pent-Acetate for systems containing resins and RS Nitrocellulose. Sharples Chemicals, Inc., 123 S. Broad St., Philadelphia 9, Pa.

Equipment

Permanite Equipment

4-p. brochure describing use of Permanite in corrosion-proof chemical equipment. Permanite is a furfuryl alcohol resin. Copies may be obtained from Maurice A. Knight Co., Kelly Ave., Akron 9, O.

Instruments

96-p. booklet complete with pictures and illustrations of the latest instruments and equipment in the laboratory, analytical, and measurement fields. Minneapolis-Honeywell Regulator Co., Brown Instruments Division, Wayne and Windrim Aves., Philadelphia 44, Pa.

Solaramic Process

24-p. brochure describing how industry can conserve strategic materials and extend the life of metals used at high temperatures through the use of ceramic coatings. Of special interest to metal working industry and enameling field. Research Products Division, Solar Aircraft Co., San Diego 12, Calif.

Dehumidifier

32-p. bulletin, "Because Moisture Isn't Pink," describes dehumidifying equipment used in industry moisture problems. Includes photographs of actual installations. Pittsburgh Electrodryer Corp., P.O. Box 1766, Pittsburgh 30, Pa.

Pumps

38-p. catalog of the firm's line of "Tri-Rotor" pumps containing information on the various models of pumps, their operations, pump accessories, and the combinations and permutations possible with these accessories. Engineering data is included to aid the user in his selection of proper size pump. The Yale & Towne Mfg. Co., Chrysler Bldg., New York, N.Y.

Elevated Steel Tanks

20-p. brochure discussing modern water storage in elevated steel tanks. Contains 50 installation photographs, tank dimensions and other data. There is also a section pertaining to accessory equipment. Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Pa.

Centrifugals

16-p. booklet discussing Reineveld centrifugal machines, including graphic illustrations and photographs. Also featured are precision standards, size range, and design features. Heyl and Patterson, Inc., 55 Water St., Pittsburgh, Pa.

CHEMICAL WEEK • ADVERTISER'S INDEX • JULY 19, 1952

ADAMS CO., INC. R. F. 49
Agency—Melvin B. Hall Advertising Agency
AIR PRODUCTS, INC. 39
Agency—Thoma & Gill
AMERICAN-BRITISH CHEMICAL
SUPPLIES, INC. 6
Agency—Richard Lewis Advertising
AMERICAN GAS & ELECTRIC CO. 38
AMERICAN MINERAL SPIRITS CO. 41
Agency—Leo Burnett Co., Inc.
AMERICAN POTASH & CHEMICAL CORP. 24
Agency—Charles W. Curtis Advertising
ARMSTRONG CO., THE 20
Agency—William J. Williams Advertising
ATLAS POWDER CO., INC. 21
Agency—The Atkin-Knight Co.
BAKER CHEMICAL CO., J. T. 26
Agency—Wildrick & Miller, Inc.
BALTIMORE & OHIO RAILROAD 18
Agency—The Richard A. Foley Advertising
Agency, Inc.
CARBIDE & CARBON CHEMICALS CO.,
A DIVISION OF UNION CARBIDE &
CARBON CORP. 55
Agency—J. M. Mathes, Inc.
CELANESE CORP. OF AMERICA 3
Agency—Ellington & Co., Inc.
CHICAGO & EASTERN ILLINOIS
RAILROAD 60
Agency—Erwin Wasey & Co., Ltd.
COMMERCIAL SOLVENTS CORP. 17
Agency—Fuller & Smith & Ross, Inc.
CROLL-REYNOLDS CO., INC. 41
Agency—J. Hayden Twist Advertising
DAVIES NITRATE CO., INC. 61
DAVISON CHEMICAL CORP., THE 37
Agency—St. Georges & Keyes, Inc.
DOW CHEMICAL CO., THE 22
Agency—MacManus, John & Adams, Inc.
EASTMAN KODAK CO. 55
Agency—Charles L. Rumrill & Co., Inc.
EMPIRE TRUST CO. 49
FILTRON CORP. 54
Agency—Heintz & Co., Inc.
FINE ORGANICS, INC. 29
Agency—Shl N. Cottin Advertising Agency
GENERAL CHEMICAL DIVISION, ALLIED
CHEMICAL & DYE CORP. Back Cover
Agency—Atherton & Currier, Inc.
GREINER CO., THE EMIL 23
Agency—Fairfax Advertising Agency, Inc.
HALL CO., THE C. P. 30
Agency—Crutenden & Eager Advertising
HARDESTY CHEMICAL CO., INC. 1
Agency—Terrill, Belknap, Marsh Associates

HARTE CO., JOHN J. 50
Agency—Mozler, George & Wooten Advertising
HERCULES POWDER CO. 9
Agency—Fuller & Smith & Ross, Inc.
HOOKER ELECTROCHEMICAL CO. 46
Agency—Charles L. Rumrill & Co., Inc.
INDOL CHEMICAL CO. 56
Agency—McCann Erickson, Inc.
INLAND STEEL CO. 10
Agency—Weiss & Geller, Inc.
INTERNATIONAL MINERALS & CHEMICAL
CORP. 28
Agency—C. Franklin Brown, Inc.
INTERNATIONAL PAPER CO. 59
Agency—Pleard Advertising Co.
KAY-FRIES CHEMICALS, INC. 6
Agency—Richard Lewis Advertising
KEIDING PAPER PRODUCTS CO. 61
Agency—Morrison Advertising Agency, Inc.
KOPPERS CO., INC., CHEMICAL
DIV. 31, 32, 33, 34
Agency—Batten, Barton, Durstine & Osborn, Inc.
LITHIUM CORP. OF AMERICA, INC. 29
Agency—F. H. Faber Advertising
LITTLE, INC., ARTHUR D. 52
Agency—Larcom Randall Advertising
MC KESSON & ROBBINS, INC. 53
Agency—Bisberne Advertising Co.
METALLOY CORP. 29
Agency—F. H. Faber Advertising
MURRAY CO., INC., A. B. 2
Agency—Fred M. Reast Advertising
NATIONAL DISTILLERS CHEMICAL CO. 40
Agency—J. Hayden Twist Advertising
NIAGARA BLOWER CO. 48
Agency—The Moss Chase Co.
PITTSBURGH COKE & CHEMICAL CO. 15
Agency—Walker & Downing Advertising
PRATER PULVERIZER CO. 24
Agency—Simmonds & Simmonds, Inc.
QUAKER OATS CO., THE 4
Agency—Boyers & Smith Advertising
ROHM & HAAS CO. 45
Agency—John Falkner Arndt & Co.
SINDAR CORP. 51
Agency—Hazard Advertising Co.
SOLVAY SALES DIVISION, ALLIED
CHEMICAL & DYE CORP. 2nd Cover
Agency—Atherton & Currier, Inc.
SPARKLER MANUFACTURING CO. 27
Agency—Krecker & Melan, Inc.
STAUFFER CHEMICAL CO. 25
Agency—J. Hayden Twist Advertising

STEPAN CHEMICAL CO., THE 5
Agency—Frank C. Nahser, Inc.
SUNDHEIMER CO., HENRY 23
Agency—Givaudan Advertising Co.
UNION BAG & PAPER CORP. 3rd Cover
Agency—Smith, Haeel & Snyder, Inc.
UNION CARBIDE & CARBON CORP.,
CARBIDE & CARBON CHEMICALS CO. 55
Agency—J. M. Mathes, Inc.
U. S. POTASH CO. 53
Agency—McCann Erickson, Inc.
UNITED STERLING CORP. 51
WELCH, HOLME & CLARK CO., INC. 20
Agency—Byrle, Richard & Pound Advertising
WESTINGHOUSE ELECTRIC CORP. 42-43
Agency—Fuller & Smith & Ross, Inc.

ADVERTISING STAFF

ADVERTISING SALES MGR. B. E. Sawyer
BUSINESS MANAGER Albert E. Weiss
Atlanta 3 Ralph C. Maultsby, 1321
Rhodes-Haverty Bldg., Walnut 5778-2383
Chicago 11 Alfred D. Becker, Jr.
Steven J. Shaw, 520 N. Michigan Ave.,
Whitehall 4-7900
Cleveland 15 Vaughan K. Dissette,
1510 Hanna Bldg., Superior 7000
Dallas 1 James Cash, First National
Bank Bldg., Prospect 7-4064
Los Angeles 17 Jos. H. Allen, 1111
Wilshire Blvd., Michigan 3691
New York 36 Knox Armstrong,
Robert S. Muller, Charles L. Todaro,
330 West 42 St., Longacre 4-3000
Philadelphia 3 William B. Hannum, Jr.,
Architects Bldg., 17th & Sansom Sts.,
Rittenhouse 6-0670
San Francisco 4 Ralph E. Dorland,
68 Post St., Douglas 2-4600
Boston 16 350 Park Square Building
Hubbard 2-7160
Detroit 26 856 Penobscot Bldg.,
Woodward 2-1793
Pittsburgh 22 738 Oliver Bldg.,
Atlantic 1-4707
St. Louis 8 3615 Olive St.,
Continental Bldg., Lucas 4867



"and from the best makers, lady!"

These are well made and give dependable service, the sidewalk merchant implies. Was there ever an eager salesman who didn't!

To the men who order more than 85 per cent of all Multiwall bags, reliability of manufacturer is one of the most important considerations*.

But it must be a *proved* reliability.

Union reliability has been demonstrated by 76 years of unbroken leadership in paper packaging. Union's mammoth

Savannah plant, world's largest integrated pulp-to-container mill, produces Multiwalls by the million.

Capacity and fair treatment are among the many good reasons why, with a free choice of all Multiwall manufacturers, major buyers are specifying UNION Multiwalls to a greater extent than ever before.

More so every day . . .

IT'S UNION FOR MULTI WALLS

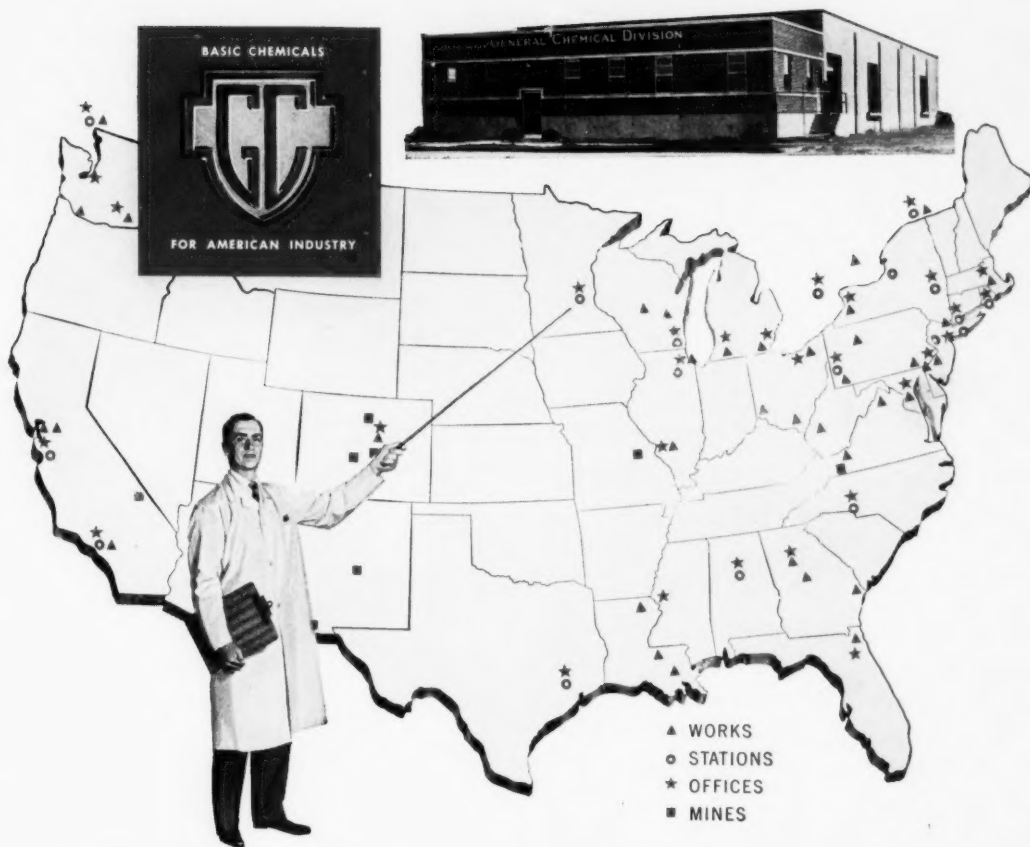


*August, 1951 research study.

UNION BAG & PAPER CORPORATION • WOOLWORTH BUILDING, NEW YORK 7

GEARED TO MEET TODAY'S NEEDS

General Chemical's Distributing Station Now...Finer Than Ever!



TO HELP SUPPLY Industry's chemical requirements swiftly and smoothly, General Chemical has created *almost 100 service and supply points across the country*. Among these is General's extensive chain of Distributing Stations now equipped to provide finer services than ever in major centers of commerce.

MANY HAVE BEEN greatly expanded over the past year. Some have been relocated in large new quarters designed especially for storing and shipping heavy, fine and laboratory chemicals.

THIS MONTH, General is moving its Minneapolis Station into the large new office and warehouse pictured here. Recently, it opened similar quarters for its Stations in Albany and Syracuse, N. Y., Birmingham, Ala., Houston, Texas, and Montreal, Quebec.*

EACH EXPANSION, each new station, has been created for a single purpose—to mesh with General Chemical's Producing Works in providing the best possible service to chemical consumers from coast to coast.

THESE MODERN integrated distribution facilities can mean much in handling your chemical purchasing problems wherever your operations may be located. You will find them particularly advantageous if you have many plants being served by a central purchasing department.

Let us put these facilities to work for you—soon!

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices in Principal Cities from Coast to Coast

*In Canada: The Nichols Chemical Company Limited

ACIDS • ALUMS • SODIUM COMPOUNDS • PHOSPHATES • FLUORINE DERIVATIVES • REAGENTS & FINE CHEMICALS